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SOCIAL COMPLEXITY IN EARLY TAMILAKAM:

SITES AND CERAMICS FROM THE PALGHAT GAP, KERALA, INDIA

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A DISSERTATION

in

Anthropology

Presented to the Faculty of the University of Pennsylvania in Partial

Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Supervisor of Dissertation

Graduate Group Chairperson

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To Appa and Amma

Whose love and support

made this possible

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ABSTRACT

SOCIAL COMPLEXITY IN EARLY TAMILAKAM: SITES AND CERAMICS FROM THE PALGHAT GAP, KERALA, INDIA

Shinu Anna Abraham

Gregory L. Possehl

This project is the first step in an effort to re-conceptualize theoretical and methodological approaches to the study of complex organization in a region of late Iron Age/early Historic South India known as Tamilakam. It has been argued that the time has come to rethink the nature of early Asian complex societies. After a half a century of archaeological investigations, virtually no new insights have been made about early South Indian social organization in the time period between 300 BC and AD 300—a shortcoming that may be attributed to two factors: 1) a tendency to use traditional hierarchical social classification schemes without first critically examining their relevance to the particular historical developments in early South India and 2) a preference for broad, regional interpretations of the material culture at the expense of finer scales of analysis. To counter these limitations, this study examines the suitability of alternative paradigms of complexity—specifically heterarchy—using a "bottom-up" approach. The hypothesis under investigation is that there existed in early Tamilakam a system of sub-regional localized communities that had would have been invisible in earlier region-wide interpretations of the material culture. The results of the fieldwork, based on two seasons of survey in the state of Kerala, suggest that this is indeed did the

case, and that two key strategies led to these results: 1) a critical approach to the relationship between the historical and archaeological records from early Tamilakam and 2) a willingness to evaluate emergent Tamil social complexity using a definition of "complexity" that falls outside evolutionary stage models. The application of the heterarchical model to the archaeological data is supported by the Tamil documentary record, which describes a society structured around a series of physiographic zones, each with its own system of adaptation. This project concentrated on recovering the archaeological remains of one of these zones—the Palghat Gap, a mountain pass in Tamilakam. The findings support the argument that, while regional Tamil polities may have been structured loosely as hierarchical polities, these polities were rooted within a system of pervasive sociopolitical heterarchy at the local level.

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CHAPTER ONE

SOCIAL COMPLEXITY IN LATE IRON AGE/EARLY HISTORIC TAMILAKAM

Introduction

This study will evaluate anthropological models of social complexity and their applicability to a historically documented period of the South Indian past. The region was known as Tamilakam; the time period under consideration is 300 BC to AD 300. The argument is made that the archaeological evidence for social groups in late Iron Age/Early Historic Tamilakam does not appear to conform to traditionally conceived forms of social organization; hence it is necessary to consider alternative models within which social complexity can be addressed through an analysis of material remains and their patterning. This study investigates current approaches to social complexity in South Asia and then introduces the concept of heterarchy as an alternative paradigm. Previous interpretations of archaeological data in the region have largely been shaped to by the documentary record, and no one has yet attempted to apply current anthropological models of social complexity. This approach for understanding early Tamil material culture does not ignore the historical record, but instead seeks to integrate the historical and archaeological records more tightly and explicitly. New mortuary, settlement, and ceramic data from a regional survey of the Palghat Gap in Kerala, South India, is considered and evaluated in the context of prevailing text-based reconstructions of the period. This study has been structured around the analysis of two bodies of material data—megaliths and ceramics—in conjunction with the analysis of historical documents,

and concludes that the archaeological data from Iron Age/Early Historic Tamilakam can be better understand with the application of heterarchical principles to early Tamil society.

Scope of Study

The following chapter is an overview of traditional archaeological paradigms for the study of social complexity, and the argument is made that prevailing hierarchy-based evolutionary models have failed to capture the forms of social organization evinced by the South Asian archaeological data. As an alternative approach, the heterarchy model is introduced and discussed, and its potential usefulness as a tool to study the material culture of early Tamilakam is investigated.

A survey of the archaeological data from Kerala and Tamil Nadu—the region associated with ancient Tamilakam—for the late Iron Age/Early Historical period is presented in Chapter 3. The justification for isolating Kerala and Tamil Nadu as a distinct culture region is explained, and its principle geographical and topographical features are described. No effort is made to point out some of the limitations of earlier research and the attendant difficulties in interpreting published reports. The most important Iron Age and Early Historical sites and surveys that have been published are then outlined, as are the corpus of artifacts associated with each period.

The documentary record for early Tamilakam is outlined in Chapter 4. A clear understanding of the historical evidence is critical because South Indian archaeologists have always relied on the text-based reconstructions of early Tamil society to underpin their archaeological findings. The Sangam texts, which form the main source of data on

early Tamil social organization, are described. A principal focus of the chapter is the *tinai* theme that runs through the Sangam texts and is an alternate basis on which to model Tamil heterarchical organization. The *tinai* theme is a broad five-fold physiographic division of the Tamil landscape, with each segment having a corresponding mode of human adaptation. Non-Tamil texts are also examined, including other South Asian sources and western classical literature. Finally, a distillation of the key themes that pervade the texts is presented, including the ways in which archaeologists have approached the process of integrating texts with archaeological data.

Chapter 5 is an overview of the fieldwork on which this study is founded—the Palghat Gap survey. The geography of the greater Palghat Gap region is presented, including geomorphology, climate, vegetation, water resources, cultivation, and settlement features. After a brief introduction about previous archaeological research in the region, a detailed description of the goals and structure of the survey is outlined, as well as a description of the sites that were found and a preliminary interpretation of the settlement data.

Chapter 6 comprises a description and analysis of the ceramic assemblage from the Palghat Gap survey. Traditional South Indian ceramic classification schemes are problematic; hence this chapter is an attempt to develop a typology independent of previous research. Because of the lack of decorative elements and the small size of most of the sherds in the collection, this analysis concentrates mainly on rim morphology. Other ceramic characteristics are also isolated and classified, including paste, slip treatment, and inclusions; a preliminary typology is developed.

The data from Chapters 5 and 6 is synthesized in Chapter 7. The variability of the mortuary and ceramic data is considered from three different but complementary perspectives. First, the evidence for intra-site variability within the two main mortuary complexes in the region is examined through a search for patterns in the number and size of mortuary features, and an examination of the variability in the ceramic assemblage associated with each complex. The evidence from the numerous smaller mortuary sites found during the survey is also addressed. Second, the identification of non-mortuary sites that may have functioned as settlements is examined, and a comparison of the ceramic assemblages of these sites with those of the mortuary sites is presented. Finally, the question of geographical variability is addressed through a comparison of the mortuary and ceramic data associated with the two main river tracks that run through the Palghat Gap, one located in the northern portion of the Gap and the other in the south.

In Chapter 8 there is a discussion of the evidence from the Palghat Gap survey specifically, and from early Tamilakam in general, in the context of traditional hierarchy-based models of social complexity. The conclusion is drawn that the degree of variation in the material data does not conform to models based on the assumption of the existence of clearly and rigidly ranked social groups. Instead, it is proposed that the archaeological data lend themselves better to a model based on the principles of heterarchy, particularly in this hinterland region lacking urban centers, where localized social formations are more likely to have structured daily activities and interaction. Rather than attempting to make the archaeological data conform to the text-based reconstructions of a predominantly ranked society in the form of chiefdoms or early kingdoms, it is more likely that the utility of texts for the archaeologist may lie in the proper extraction of the

tinai concept, which provides a segmentation of the population based, not on hierarchical status, but on complementary and interdependent relationships with the ecological setting and with one another.

Chapter 9 is a presentation of the findings of the research in light of the questions posed at the beginning of the study and a discussion of directions for future research.

CHAPTER 2

HIERARCHY AND HETERARCHY IN SOUTH ASIA

Traditional Views of Complexity and Social Organization

A primary concern within anthropological archaeology is the investigation of social complexity, past and present. In this study social complexity is measured by the presence of internal vertical and horizontal differentiation within a social system, similar to McGuire's concepts of heterogeneity and inequality, where heterogeneity refers to the number of different components within a system and inequality refers to differential influence or access to resources (McGuire 1983: 101-02). The issues embodied in an investigation of social complexity are varied. How, for example, is "complexity" distinguished from other attributes of social organization? What are the conditions antecedent to the onset of social complexity? How are such social units configured, and why and how do they transform over time? In the quest for explanations about complex societies, what criteria should guide the efforts to balance the search for underlying cross-cultural generalities, on the one hand, with the need to account for cultural and historical specificities, on the other?

As will be discussed in Chapter 3, the archaeological record for the states of Kerala and Tamil Nadu (Figure 2-1), which comprise the boundaries of early Tamilakam, have rarely presented evidence for an explicitly ranked or highly stratified society. Studies of mortuary evidence do not demonstrate clear evidence of distinctions based on status, sex, or other markers. This deficiency is no doubt attributable to problems with the practice of archaeological research in the region (also discussed in Chapter 3). The

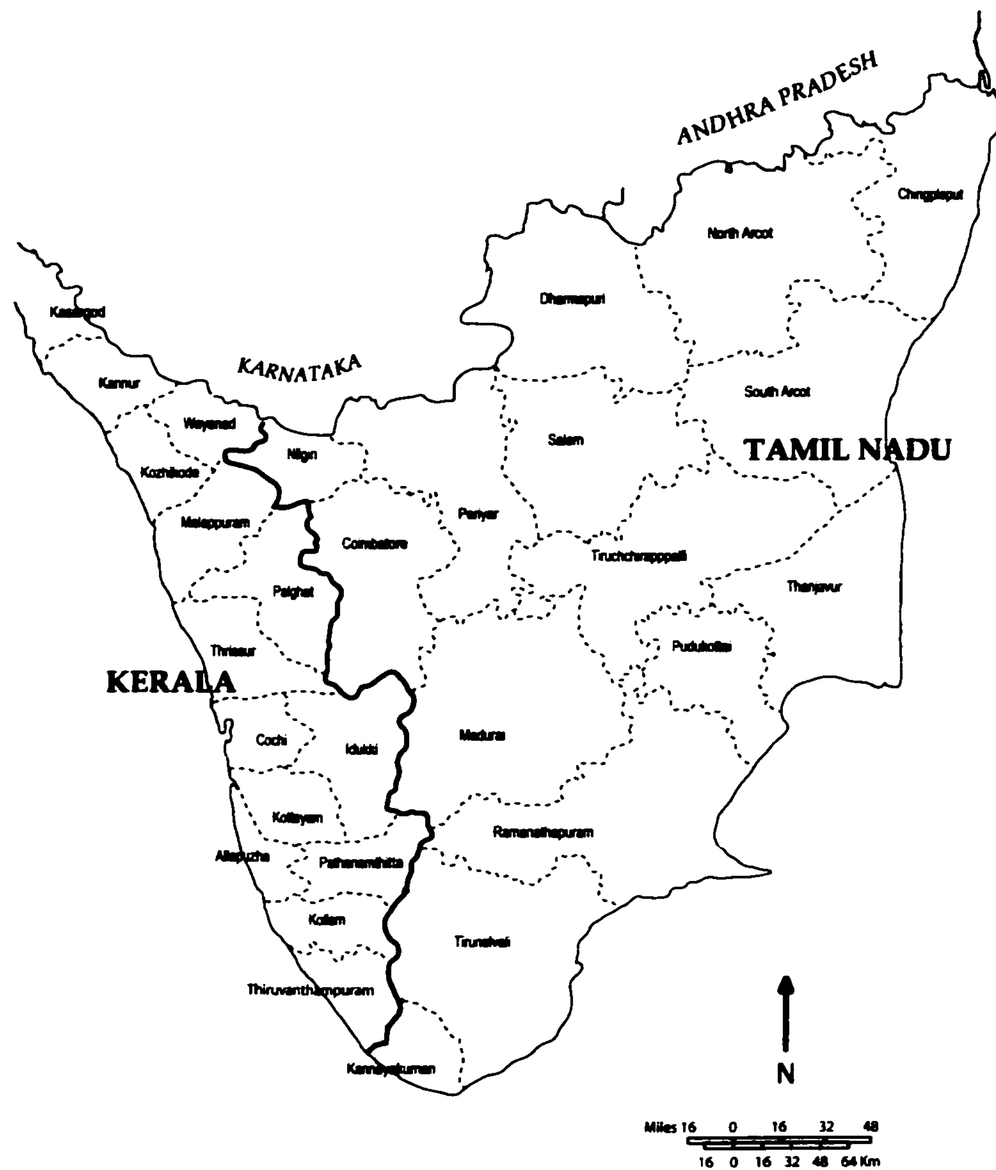


FIGURE 2-1: States of Kerala and Tamil Nadu with district divisions

lack of clear hierarchy markers has led archaeologists to rely instead on the abundant documentary evidence to supply the information about social structure and process in early Tamilakam. As will be shown in Chapter 4, this reliance has led to an overemphasis on the characterization of Tamil society as collection of complex chiefdoms or incipient kingdoms, and a resulting lack of attention to non-urban centers and hinterland organization. This is not to deny that there is a growing interest in alternative paradigms of early Tamil society, but to date such studies are primarily text-based. In this chapter, an overview of the study of complexity in archaeological research is presented, demonstrating how traditional schemes tend to falter in the South Asian context. The concept of heterarchy as an alternative theoretical model for the study of early Tamil material culture is then considered.

Evolutionary Frameworks in the Study of Complexity

Issues about complexity cannot be effectively addressed until the concepts employed are properly defined or, following Wheatley's example, until it is understood how those concepts have so far been utilized within the discipline (Wheatley 1972: 601-2). In archaeology, the study of complex societies often revolves around an exploration of the features that are thought to be encompassed by the term "complexity," most notably "civilization" (Childe 1944), "state" (Claassen and Skalnik 1978), "city" (Sjoberg 1960, Wheatley 1971), and "urbanization" (Adams 1979, Trigger 1972); and the processes by which social complexity is achieved, which most often fall under the rubric of evolution (Kristiansen 1987, Fried 1974, , Service 1971, Carneiro 1969a, White 1959, Steward 1955). Implicit in these broad categories is the continuous quest for the

particular constellation of variables that are responsible for promoting social complexity (Possehl 1990, Wright and Johnson 1975, Carneiro 1967b, Adams 1966) the manner in which these variables articulate with one another (Conrad and Demarest 1984, Wright 1977, Flannery 1972), and the factors leading to the demise of states (Tainter 1988, Yoffee and Cowgill 1988).

Criticism has been raised that prevailing evolutionary frameworks have reached an empirical "dead end" in archaeology (Shennan 1993, Yoffee 1993: 60). Nevertheless, it is within the context of social evolutionary theory—and the related scheme of socio-cultural stages or types—that most archaeological studies of complex societies are understood. This may have to do with the argument that evolutionism in archaeology has had its greatest impact in the research on complexity (Dunnell 1989: 35) but, whatever the reason, it seems clear that the study of cultural "complexity" in archaeology can be appreciated only when it is perceived as one segment of a larger continuum that comprises societal growth and differentiation.

Following the contributions of nineteenth-century archaeologists such as Morgan (1985 [orig. 1877]), the clearest exposition of cultural evolutionary principles re-emerged in American anthropology in the writings of Leslie White and Julian Steward. In part a reaction to the historical particularist strategies espoused by Franz Boas (1965), White presented social systems as phenomena that exhibited non-random developmental change over time, which in turn could be evinced as cross-cultural regularities. White's formation of a unilinear evolution was broadly deterministic and technology-driven; to White, increased cultural sophistication meant an increased efficiency in the ability to harness, organize, and channel the use of energy (White 1959). Like White, Steward also

argued for the existence of cross-cultural similarities at similar levels of development. But, unlike White, Steward favored a more complex, multilinear, ecologically based approach that sought to explain the variability in societies as the product of specific adaptive strategies to different environmental conditions (Steward 1955).

With the groundwork laid for perceiving social variation as the product of directional change, archaeologists seemed to model different types of social organization as a series of "evolutionary stepping stones" (Shennan 1993: 53); culture change was exemplified by increasing socio-cultural complexity (Trigger 1989b: 292, Kristiansen 1987, Lamberg-Karlovsky and Sabloff 1974, Carneiro 1970). The construction of generalized unilinear sequences, such as those by Service (1971) and Fried (1974), are examples of this transformation, and, in light of their enormous impact on archaeological characterizations of social complexity, they merit closer examination.

Both Service and Fried relied on ethnographic and ethnohistorical data to construct cultural evolutionary frameworks in which to organize cultural variation and change. Service's model followed a sequence of stages based on increasing levels of institutional complexity, from band to tribes to chiefdoms to states. To Service, these social groupings were distinguished by the nature of the socioeconomic bonds that held them together: where ties of kinship sufficed in the essentially egalitarian environments of bands and tribes, the more complex groupings (chiefdoms and states) cohered through the development of governmental and other socio-political institutions (Service 1971). In contrast, Fried developed an evolutionary scheme where society progressed through stages of egalitarian, ranked, stratified, and state organization. Fried's sequence was

founded on the conception that increasing complexity resulted from different access to resources within a society (Fried 1974: 33).

The development of evolutionary classifications was paralleled by the need to conceptualize the dynamics of change from one stage to the next, that is, the need to isolate the factors that contributed to movement along a scale of increasing cultural complexity. To this end, a number of single-cause theories were proposed that attempted to link change with a specific feature of a culture or its environment. These features included demographic pressure (Boserup 1965), hydraulic control (Wittfogel 1957), environment circumscription and warfare (Carneiro 1970), and long-distance trade (Adams 1975). In reaction to the relatively narrow focus of these theories, other archaeologists favored Steward's multilinear evolutionary principles, and employed a multivariant approach to culture change (e.g., Wright 1977, Wright and Johnson 1975, Adams 1966). In addition to arguing that no single feature could operate as a trigger for complexity, some scholars (e.g., Lamberg-Karlovsky and Sabloff 1974, Flannery 1972, Adams 1966) embedded the features of culture change within systems models. Such systems-based approaches, it was argued, allowed archaeologists to develop functional explanations for culture change and to focus their researches on the processes and interrelationships between particular subsystems such as technology, economics, politics, and religion (Lamberg-Karlovsky and Sabloff 1974: 2).

Within this evolutionary-functionalist framework, archaeological studies of cultural complexity have focused on those specific features, mentioned earlier, that seem to characterize complexity: civilization, urbanism, the state, and the city. Again, in the course of studying complexity, these features often overlap with one another: urbanism,

for example, has been viewed as a subsystem of civilization (Lamberg-Karlovsky and Sabloff 1974, Adams 1966); the state has been equated with civilization (e.g., Wright 1986); and the growth of urbanism and the evolution of cities are often perceived to be the same phenomenon (Wheatley 1972, 1971; Sjoberg 1960, Childe 1944).

The "state" has been the subject of intense investigation in archaeology, and definitions of the term have by and large depended on the particular theoretical interests of the researcher. Viewed as the culmination of an evolutionary trajectory, the state was defined by Fried as "the complex of institutions by means of which the power of the society is organized on a supra-kin basis" (Fried 1967: 229), a definition echoed by Adams (1966). Adams, like Fried, also emphasized the use of legitimate force within the state to preserve social stratification (Adams 1966: 14). Wright focused on functional interactions when he described the state as having a "differentiated internally specialized decision-making subsystem that regulates varying exchanges among other subsystems (Wright 1978: 55-56). Kristiansen, espousing a Marxist framework, raised the possibility of viewing the state as a "formalized hierarchy of exploitation" (Kristiansen 1987).

Despite their differences, a number of common threads run through these depictions of the state, including internal social differentiation and the development of a more complex political order. Similar ideas laid the foundations for various theories of state formation. The rise of the state has been attributed to, among other causes, the coordination of information flow and decision-making (Wright 1978, 1977; Wright and Johnson 1975), the role of warfare (Carneiro 1970), and the impact of religion and ideology (Wenke 1990, Conrad and Demarest 1984).

Social Complexity and South Asian Archaeology

In South Asian archaeology, the study of social complexity manifests itself in the examination of the formation, maintenance, and transformation of cities and states during the two main phases of urbanization in South Asian history: (1) the Harappan period and (2) Early Historic period in the Gangetic basin in north India. Interpretations of social complexity in ancient South Asia tend to vary according to the source material used to analyze them: archaeological interpretations, being material-based, focus primarily on technological, ecological, and economic factors to explain complexity (Kenoyer 1998, Morrison 1995, Possehl 1990, Allchin 1989, Begley 1987, Chakrabarti 1984-85, Allchin and Allchin 1968); in contrast, interpretations based on documentary evidence are often centered on the religious, political, and ideological stimuli (Thapar 1984, Heitzman 1984, Subramaniam 1966).

Discussions about the emergence of the Harappan civilization revolve around the relative importance of indigenous processes and the diffusionist impact of neighboring regions like Mesopotamia (Allchin 1993 [orig. 1982], Possehl 1993 [orig. 1982]). The nature of the Harappan "state" is also a source of contention. Jacobson, for instance, argues that the Mature Harappan culture complex satisfies most requirements for early statehood (Jacobson 1986). His argument is based on primarily on the archaeological evidence for those traits generally associated with civilization: urbanism, writing, a vast territory and large population, and relative uniformity of style (Jacobson 1986: 138). Jacobson's essay is a response to Shaffer (Shaffer 1993 [orig. 1982]), who considers such approaches to Harappan culture uncritical and traditionalist, and too imitative of

prevailing Mesopotamian models of state formation (Shaffer 1993 [orig. 1982]: 49). Instead, according to Shaffer, more regional variability is evident within Harappan culture than is generally acknowledged, and what cultural homogeneity exists can be attributed to an extensive and intensive internal distribution and communication system rather than strong centralized government control (Shaffer 1993 [orig. 1982]: 44-5). Possehl has argued that the Indus civilization exemplifies a form of ancient sociocultural complexity that must be understood outside traditional representations of the "chiefdom" or the archaic state (Possehl 1998). The demise of the Harappan cultural system is still not well understood, although a range of explanations have been proposed, including Aryan incursions (Allchin and Allchin 1974, Wheeler 1947-48), evolution in the course of the Indus River (Lambrick 1974), and flooding as a result of earthquakes (Raikes 1964, Dales 1979,). Recent reanalyses of the data pertaining to post-Mature Harappan transformations seem to demonstrate that in fact the Indus civilization underwent a process of de-urbanization and a geographical shift in the population distribution (Possehl 1997).

Most archaeological studies of the "second urbanization" of South Asia in the first millennium BC also have implicit evolutionist-functionalist underpinnings. The development of *mahajanapadas*, or states, in the Ganga Valley is attributed by Allchin (1989) to independent indigenous development; he ascribes the subsequent growth of cities in the Deccan and Sri Lanka to population pressure and colonization (Allchin 1989: 10). In his elaboration on the possible combination of factors that could have triggered urbanization in north India, Chakrabarti cites the need for an agricultural base, organized trading activity, and a centralized political force (Chakrabarti 1984-85: 73), the most

important of these being centralized control. Trait list approaches are common in the analysis of urbanization and city formation in North India at this time (Erdosy 1987, Thakur 1981). Historical reconstructions of state development in the Ganges Valley make use of political and religious texts to posit transformation from kin-based and lineage descent systems to ones that were more state-oriented and centralized (Thapar 1984, Sharma 1983).

The development of complex societies in South India is perceived to be the later manifestation of processes begun in North India and diffused via the Deccan Plateau and Sri Lanka into South India (Allchin 1995, 1989) (Figure 2-2). Factors that have been cited as the key stimuli for triggering complexity in different subregions of South India include the rise of Buddhist monastic institutions (Morrison 1995, Ray 1986, Heitzman 1984); the intensification of earlier social patterns (Pareshar 1992); and the florescence of maritime, coastal, and overland trade systems (Ray 1994, Begley 1987; Maloney 1970, 1968). In the later medieval centuries of South Indian history, complexity is often characterized in the form of socio-religious relationships among numerous subgroups (Champakalakshmi 1989, 1982; Hall 1982; Hall and Spencer 1980; Stein 1980). Social complexity in the form of imperial control has been the focus of research on the later medieval empire at Vijayanagara (Sinopoli and Morrison 1995, Sinopoli 1994, Morrison and Sinopoli 1992, Fritz 1986).

Beyond Evolutionism: Alternative Approaches to Complexity

In his 1984 article "Archaeology at the Crossroads," Bruce Trigger observes that a pure evolutionary-systemic view of past societies makes two assumptions: (1) the

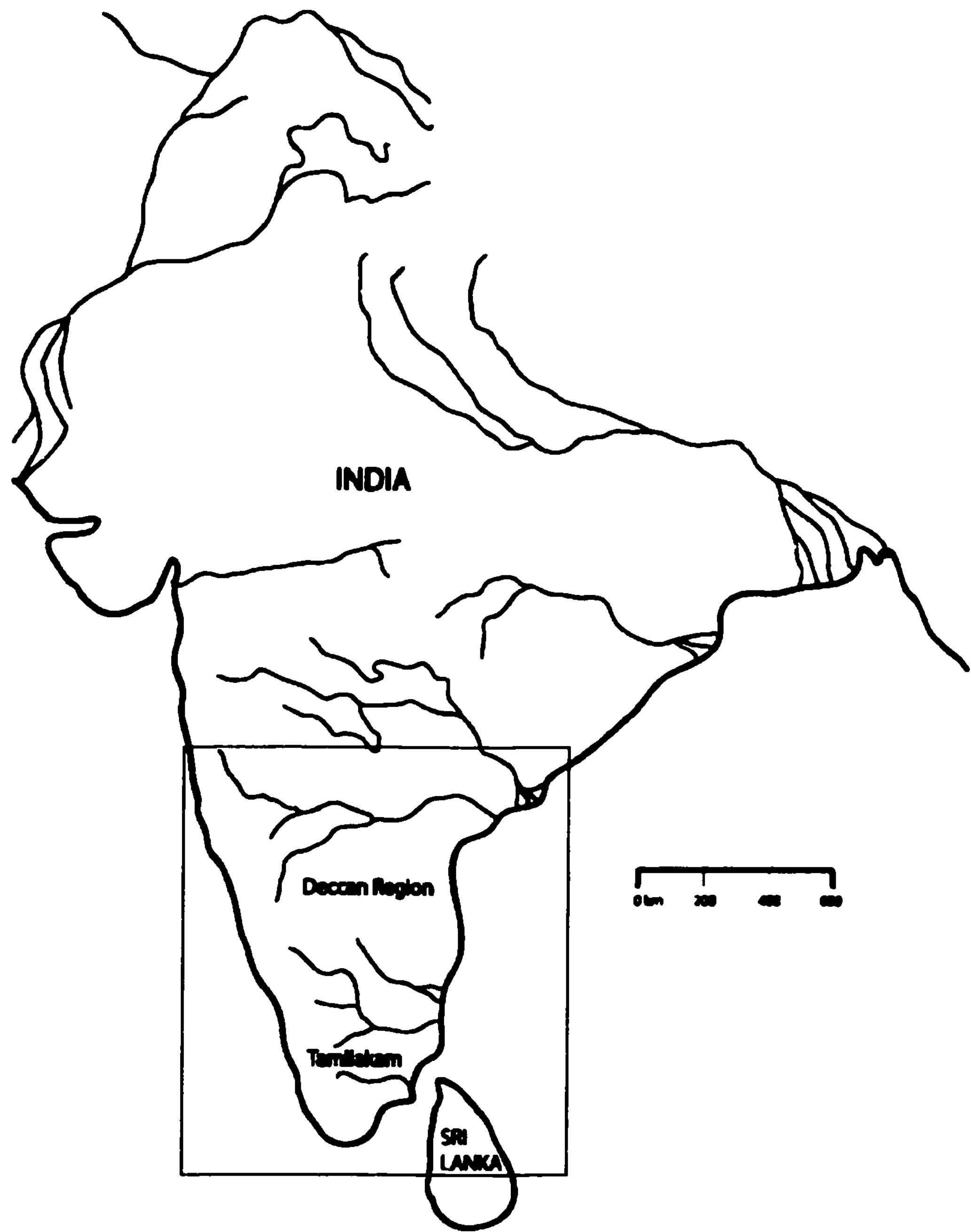


FIGURE 2-2: South India, Deccan Region, and Sri Lanka

relatively rigid determinism of the evolutionary trajectory and (2) a view of archaeological cultures as isolated, tightly integrated units (Trigger 1984: 279-80). Without completely discarding either premise, the trend since the 1970s, according to Trigger, has been to view human behavior as more complex and less deterministic: "Any general explanation of cultural change must...take into account of how neighboring societies influence one another as well as of changes that are of endogenous origin..." (Trigger 1984: 294-95). In the same vein, Yoffee (1988) argues that an additional historical perspective is critical to prevailing neo-evolutionary theories of state formation (Yoffee 1987: 28). The emergence of states must be analyzed within their specific historical frameworks; historical contextualization would prevent notions of "state" and "complexity" from being conceived too generically, too mechanically, and, hence, uninterestingly.

Gledhill extends Trigger's ideas even further and argues that universalizing definitions of the state, civilization, and society are not possible without considering the myriad forms that human social and political relationships can take, as well as their cultural dimension (Gledhill 1988: 1). Moreover, these terms imply the existence of discreet, tangible boundaries of social systems, when in fact humans seem not to be confined to any single system, but instead are members of a "multiplicity of only partly coalescing organizations, collectivities, and systems" (Eisenstadt 1988: 236). Such a description seems especially apt for South India during the Early Historic Period: in addition to the "centralizing" polities of the Chera, Chola, and Pandya "kingdoms," there is evidence for the impact of brahmanical, Jain, and Buddhist religious institutions, of merchant and other occupational guilds, and perhaps even of caste divisions. It would be

impossible to characterize social complexity in Early Historic South India without evaluating the structure (and restructuring) of these collectivities and identities.

One potential solution is the adaptation of the organizational dynamics model proposed by Stein and Rothman (Rothman 1994, Stein 1994). In an analysis of recent research on Mesopotamian social complexity, they observe that researchers are focusing on the "roles of heterogeneity, contingency, and competition among different sectors and interest groups as critical factors whose interactions defined the fabric of Mesopotamian society" (Stein 1994: 12), which is in contrast to traditional views of Mesopotamia as composed of well-integrated, highly centralized polities. The use of the terms "chiefdoms" and "states" are retained as "useful, loosely defined frameworks for talking about complexity," but the true focus is on "how the different institutions or sectors of society actually functioned or changed, rather than on delineating the formal structural characteristics of these societies" (Rothman 1994: 1). Creating effective archaeological strategies for acquiring such information includes (1) better integration of both regional and intra-site level perspectives of politico-economic organization, (2) detailed analysis of the variations in patterns of production, exchange and consumption of different goods, and (3) tracing the limits of centralized administrative power in the social landscape (Stein 1994: 17).

As a theoretical tool for studying archaeological instances of social complexity, the value of the functional-evolutionary framework rests in its attention to long-term processes and the effort to seek out similarities across the broader cross-cultural

landscape.[1] To flesh out this framework, however, more attention should to be paid to particular regional and historical processes that contribute to the growth of complexity, to understand the "unintended consequences and unstable dynamic behavior which can emerge over the long term and which are certainly a key part of the complexity of history" (Shennan 1993: 58). Moving away from social typologies makes it possible to focus on the processes that contribute to the explanation of variation between social formations and their transformations (Blanton et al. 1996: 14). In fact, the dynamic qualities of social complexity make it an ideal subject for the kind of "archaeological tacking" back and forth between explanatory models and the material and textual evidence espoused by Wylie (1993: 24). Such an approach ought to enable the researcher to balance the quest for cross-cultural generalities with the development of relevant, contextualized interpretations of any complex society.

Current Approaches to Social Complexity in Early Historic South India

Chiefdoms versus State Systems

Before considering the application of alternative frameworks to the regional polities of Early South India, it will be useful first to analyze whether early Tamil South India appears to fit into traditional hierarchical models—for example, whether socio-political organization in Tamilakam conforms to current definitions of either chiefdoms or states. Emergent complex societies in this case are characterized by hierarchical political institutions, economic specialization, and class-based social differentiation.

[1] It has also, by stressing universality and general explanatory models, helped to incorporate the study of Asian states into general anthropological theory (Morrison 1994).

In addition to major discussions on the origin and collapse of state systems, attention has also been paid to the characterization of archaic states, that is, those early systems that had class-endogamous social strata and a highly centralized and internally specialized government (Marcus and Feinman 1998: 4). Archaic states were able to wield power in ways that preceding ranked societies could not, such as for waging war, exacting tribute, and regulating manpower and labor. If one examines the indigenous documentary record for Tamilakam (discussed in detail in Chapter 4), then it is not surprising to note that historians and archaeologists alike have often assumed that early Tamil polities behaved like archaic states. Subramanian (1966: 2) described the Tamil Sangam polity as a monarchy—which he defines as an "absolute and full sovereign"—that was neither centralized nor decentralized, although he continues to discuss in detail elements of Tamil power such as organized warfare, tax collection, and courts of justice.

Johnson and Earle (2000) identify a range of types along two dimensions, scale and subsistence, where the scale of regional polities increases from simple chiefdoms to complex chiefdoms to states to empires (Johnson and Earle 2000: 246). The most common subsistence base for regional polities is agriculture. The following culture-core variables are identified for regionally organized polities (Johnson and Earle 2000: 248-49): an environment rich in resources and transformed by intensification; high population density; major capital investment in agricultural and trade-related technologies; a hierarchical organization of social production; importance of warfare and territoriality for the purpose of expanding control over land and labor; an effort to incorporate ever larger regions under a single political system; social stratification;

sanctification of regional polity. The settlement pattern of chiefdoms is typically sedentary and hierarchical.

Redmond (1999) defines chiefdoms as follows:

> "Chiefdoms can be recognized by the centralized and hereditary leadership wielded by a paramount chief, with one or two levels of administrative control above the many member villages in their domain. Along with the centralized, hierarchical, but nonbureaucratic administration is institutionalized social ranking dominated by a chiefly hereditary elite. Overall social and political control is vested in a hereditary nobility that stands apart from the commoners. There is intense competition among members of the burgeoning chiefly elite for succession to a relatively small number of political offices—and the privileged access to resources, goods, and foreign connections that those political positions entail" (Redmond et al. 1999: 110).

Redmond suggests that chiefdoms can be recognized archaeologically on a regional level by a settlement hierarchy incorporating two or three levels based on settlement size. The paramount center should be the largest in the region, and the settlements at the topmost level should have more public architecture than the lower levels. The evidence from variable burial treatments comes in the form of clear differences in mortuary treatment, nutrition, and health. Since chiefs must mobilize labor and surplus production, one will also find evidence of intensified agricultural and craft production beyond local or household requirements, and the construction of storehouse, roads, and other facilities. Finally, the distribution of exotic prestige goods will occur between paramount chiefs and between them and their allies (Redmond et al. 1999: 110-11).

Renfew (1974) recognized different forms of chiefdoms: those that emphasized individual leaders and social hierarchy and those that emphasized group identity. Peregrine (2001) demonstrated that chiefdoms use both network strategies (relationships

between individuals) and corporate strategies (relationship of people to resources) to organize themselves. One trait that must characterize all chiefdoms is a system of financing institutions of government and the military, ceremonial functions, monument construction, etc. As Earle (2001) argued for Chaco Canyon, creating and sustaining "the regional institutions of the Chaco Canyon chiefdom required leadership, however conceived, and a system of finance to channel the surplus mobilized from a broad supporting population" (Earle 2001: 26). Earle described two systems of finance for chiefdoms: wealth finance and staple finance. Wealth finance involved chiefdoms supporting themselves through a control over the production and/or flow of luxury or prestige goods; staple finance involves controlling the food manufacture and surplus (often through land ownership) and everyday technologies, which can be used directly to support chiefs, warriors, priests, and managers (Earle 2001: 30-32).

The limitations of the chiefdom paradigm are immediately apparent, as White (1995: 102-03) discusses in her analysis of pre-state societies in Southeast Asia; the same limitations apply to Early Historical Tamil South India. First, the disciplinary paradigms used to understand early Tamilakam are based on the scholarship of historians, numismatists, and epigraphers, and archaeologists trained outside of American anthropological archaeology. There has been little effort to frame discussions in terms of cultural evolutionary principles. Second, like parts of Southeast Asia, there is in South India a paucity of archaeological data for the time period under consideration. Finally, the struggle to apply the band-tribe-chiefdom-state continuum to the polities of Early Historic Tamilakam is evident in the lack of agreement by both historians and

archaeologists over whether these polities can be characterized as chiefdoms or as state systems.

The Segmentary Model

One of the ideas that has developed out of the examination of medieval and contemporary social systems may prove relevant for proto-historic and early historic South Indian society. The early medieval Chola empire (roughly tenth through thirteenth centuries) is considered by Stein (1980) to have had a political structure which resembled a "segmentary state," in which political authority and control were local. Stein's conceptualization of South India was in part a response to traditional historians (e.g., Sastri 1966) who did not discuss the state and the economy "as interacting aspects of a political or social system" and preferred to view the Chola state as operating with a highly centralized bureaucracy (Champakalakshmi 1982: 411-12). To Stein, a unitary, centralized state was not normative for medieval South India; instead, rather, it exhibited traits of a pyramidally, segmented type of state, where "the smallest unit of political organization—for example, a section of a peasant village—was linked to ever more comprehensive units of political organization in ascending order (e.g., village, locality, supralocality, and kingdom) for various purposes, but that each unit stood in opposition to other, similar units…for other purposes" (Stein 1980: 264-65). The key administrative unit which organized village-based agriculture was the *nadu*, a territorial designation that incorporated many villages and may have begun as an economic unit, since each one seems to have a single *nagaram* or marketing center (Hall and Spencer 1980). However, while the segmentary approach may have relevance to protohistoric South India, it

requires a large regional analysis in order to identify and classify possible administrative units. Instead, it is argued here that principles derived from the heterarchy model form the best source hypotheses about early Tamil social structures.

Heterarchy as an Alternative Approach

By the 1990s, insights into the nature of complex societies brought about ideas regarding the heterarchical approach, which suggests that complex, large-scale communities could be organized by various non-hierarchical, non-centralized mechanisms implemented in local communities, rather than mainly in hierarchical forms imposed from the top down. Scholars espousing this approach emphasized that there were many different kinds of complex societies and varied combinations of causes in their formation (Roosevelt 1999: 14). Defined by Crumley as "the relation or elements to one another when they are unranked or when they possess the potential for being ranked in a number of ways" (Crumley 1995: 3), heterarchy introduces a type of relationship among different elements of a social systems (or among social systems themselves) that are not structured in a single monolithic hierarchical fashion but instead may exhibit fluid ranking and counterpoised power. Sites, for example, may be hierarchically equivalent but functionally discrete (Wailes 1995) or exhibit variations in relative ranking over time (Zagarell 1995) and space (Small 1995). As Crumley observes, the investigation of settlement and land use reflects a maze of boundaries—social, linguistic, topographic, climatic, administrative, commercial—that seem to crosscut one another (Crumley 1995: 3). Such divisions may not be amenable to an interpretative framework that focuses

primarily on hierarchical distinctions; instead, they may indicate relations that are complex without necessarily being hierarchical.

Incorporating the idea of heterarchy into the study of larger polities allows for a greater flexibility when modeling economic systems, as Small (1995) demonstrates in his interpretation of past external economies. Rather than assuming that socio-political development requires the annexation of all major aspects of the economy, Small presents two ethnographic and three archaeological examples where external trade was not "captured" by the political structure (Small 1995: 72) and instead became an alternative power base that operated against the development of a rigid political hierarchy.

A heterarchical approach to studying long-distance trade resonates particularly in the context in Early Historic South India. Instead of relying solely on models that present trade as a means for local elites to acquire prestige goods in order to establish and maintain social status and authority (e.g., Knapp 1993), it may be possible to envision a scenario in which different groups of elites, such as royal lineages, chieftains, temple and monastic authorities, and merchant guilds (all of whose hierarchical ranking relative to one another is as yet poorly understood) compete for control over the local and long-distance trade (e.g., Algaze 1993, Curtin 1984). A model based on both social inequality and heterarchy accords well, for instance with the segmentary model developed by Stein for pre-industrial medieval South India (Stein 1980), and presents the opportunity to discuss the tensions between centralization and decentralization (Claessen and van de Velde 1991: 21) and the impact of these competing forces on the organization and control of trade.

Archaeological Applications of the Heterarchical Model

In their study of lowland Maya socioeconomics, Potter and King (1999) argue that parts of Maya economic specialization were not regulated by a centralized controlling group but were instead most probably self-organized and "tuned to the spatial structure of critical resources", rather than hierarchically defined central places (Potter and King 1999: 18). From this perspective, it makes more sense to evaluate lowland Maya economy in terms of the distribution, quality, and quantity of important natural resources within the environment. Potter and King's discussion has great potential for a discussion of early Tamilakam. Like the Maya lowlands, Kerala and parts of Tamil Nadu are a tropical ecosystem. It is likely that early Tamilakam, like the Maya lowlands, was characterized by a "patchy or mosaic" resource structure that included fertile upland agricultural soils, riverine margins for wetland agriculture, marine resources, water, clay for ceramic manufacture, and mineral resources for iron working and gemstone manufacture. The Maya lived in settlements "in close proximity to critical resource zones [and] developed specialized extractive/productive community specialization" (Potter and King 1999: 19). Economic behavior in this scenario occurred "not at large centers but at smaller centers or villages located on or near critical resources. Access to resources was the critical factor in defining the spatial loci of specialized economic settlements rather than propinquity to large urban or semi-urban centers" (Potter and King 1995: 20). The archaeological evidence proffered by Potter and King are as follows: lack of archaeological markers for permanent markets; and the fact that Maya writing appears mostly to legitimize the elite and has no mention of markets, the economy, or the movement of goods (Potter and King 1999: 24).

A number of scholars have recently considered applying heterarchical principles to the study of tropical polities. Tropics—that is, regions lying between the Tropics of Cancer and Capricorn—are characterized by complex and diverse ecosystems, high level of solar radiation, and high levels of yearly rainfall (Bacus and Lucero 1999: 1-3). In her examination of the development and organization of social complexity in Amazonia, Roosevelt (1999) argues against traditional culture ecology models that state that centralized, hierarchical structures were the best response to growing human populations in ecologically heterogeneous zones (Roosevelt 1999: 14). Instead, the archaeological evidence from Amazonia supports a scenario of noncentralized and nonstratified systems that were still capable of producing large, dense populations, intensive and mixed subsistence strategies, large earthworks, and fine art and architecture (Roosevelt 1999: 28).

In her study of state formation in Malaysia, Allen (1999) describes the exchange-related organizing principles for Kedah, which involve multiple coeval elements. In Kedah, a coastal, trade-based state, Allen argues that

> "unranked socio-political relationships are most likely to have characterized far upstream and maritime ends of the network… Exchange with forest dwellers was almost certainly reciprocal. Offshore, the foreign trade networks probably incorporated both ranked and unranked relationships, depending on the requirements of the system and situation. In between, the coastal center controls midriver centers, managed the varied resource zones available to it by coordinating collection and redistribution of goods, and the most difficult resource zone to control from the coast…was the inland rainforest…forest products were eagerly sought by foreign traders, but were available only in widely separated patches that had to be exploited by people with intimate knowledge of the forest. This has traditionally encouraged individual exchanges between forest dwellers in one area and those in another. They also probably exchanged items with those who lived downstream in return for rice, pottery, etc. This reciprocal exchange encouraged interdependence, with each participant gaining access to goods from zones he or she could not personally

> exploit...Fostering interdependence would be the best way to ensure cooperation in a varied and irregular landscape, where tight vertical control would have been impossible to maintain" (Allen 1999: 143).

Accordingly, Kedah's trade-based economic system was characterized by reciprocal, unranked interactions, which are difficult to access archaeologically (Allen 1999: 143).

Heterarchical principles emphasize the distinction between horizontal differentiation and vertical differentiation. Where vertical differentiation occurs when functionally distinct elements are hierarchically ranked (Blanton et al. 1981: 21), horizontal differentiation occurs when elements are functionally distinct but either unranked or equivalently ranked within a hierarchical structure. In his analysis of ringforts and monasteries in early medieval Ireland, Wailes (1995) argues that the comparable high-status position of both site types may suggest at the same time a hierarchical equivalence and a distinction in function, supporting a heterarchical interpretation (Wailes 1995: 68). Zagarell (1995) describes an interplay between systems of hierarchy and heterarchy among south Indian Nilgiri cultures: he finds centrally organized systems coexisting with dispersed and more egalitarian systems of authority (Zagarell 1995: 98).

White (1994) identified four broad themes in the archaeological record that seem to point to the heterarchical nature of socio-political development in mainland Southeast Asia during the second millennium AD. The first is site-to-site variability in material culture, suggesting small, localized communities. The second is an economic scenario where craft specialization and long-distance trade developed in a decentralized and multicentric pattern that did not reflect hierarchical controls. The third was evidence for

flexible systems of social status and social differentiation, as indicated by the lack of clear markers for traditional ranking among mortuary remains. The last theme is the lack of archaeological evidence for violent intergroup conflict.

Heterarchy and Tamilakam

The interpretation of early Tamil polities as states arises in part from the constructions of the "state" and "chiefdom" based on western intellectual models and the application of those constructions to the archaeological and historical record of Asia (Morrison 1994:183). Morrison argues that Asian states have been marginal in the development of state theory, resulting in distortion and manipulation in the effort to fit Asian examples into western models. Archaeologists working in Asia are now in a position to integrate emerging views of social complexity into the discipline. Citing research on the Harappan civilization, Possehl emphasizes that ancient complex societies are in fact much more variable in form and organization (Possehl 1998: 291). Such efforts are still in the embryonic stage, however, and current reconstructions of early Tamil society are still largely based on traditional frameworks, which views societies as either egalitarian or ranked. Applying the heterarchical model acknowledges instead the "fluidity of human interaction and social relationships" (O'Reilly 2001: 2). Because social relationships may be constantly changing in time and space, "...it is the task of archaeologists to assess whether archaeological evidence indicates the predominance of hierarchy or heterarchy" (O'Reilly 2001: 2).

With the increasing effort to assimilate archaeological data into such reconstructions and the conscious attempt to produce models that incorporate material

evidence from Kerala and Tamil Nadu, it is to be hoped that interpretations of Tamilakam socio-political organization will become more sophisticated and discerning; the study presented here is one attempt to follow that lead. The data from the Palghat Gap is a corpus of archaeological evidence from the hinterland of Tamilakam, a region without a nearby coastal or capital urban center. This presents an opportunity to examine the existence of evidence for ranking or differentiation that does not focus on elite activity. As Possehl argues in his evaluation of the Indus civilization, "[C]omplex societies…are far more variable in their form than the typological schemes of traditional, unilineal evolution can accommodate" (Possehl 1998: 291). It is more important to recognize the variability inherent in the cultural system being studied (Possehl 1998: 291). It is this perspective that is espoused in this analysis of early Tamil society. As will be seen, it is not the features associated with chiefdoms or states that best conform to the Palghat archaeological record. Although there is still not enough archaeological data to perfectly understand the actual configuration of early Tamilakam, the proposal is made here that, by setting aside traditional typological schemes and focusing on the material culture itself, it is possible to discern patterns of internal differentiation that do note equate with conventional comparative terminology. Instead, as will be demonstrated, it is a theme gleaned from the Sangam texts, known as the *tinai* theme, which focuses on the physiographic divisions of Tamilakam and their associated human adaptations, that seems best reflected in the data and which, moreover, can be understood only by applying principles of heterarchical social organization. Before presenting the Palghat archaeological data, the next two chapters will focus on 1) an overview of current

archaeological research for the late Iron/Early Historic period in Kerala and Tamil Nadu, and 2) an evaluation of the historical records for early Tamilakam.

CHAPTER 3

ARCHAEOLOGY OF TAMILAKAM

Examining Tamilakam as a Separate Study Region

With the onset of written records in South India, archaeologists moved away from the tendency to treat the entire peninsular region as a single unit and began to isolate smaller regions whose historical records indicated distinct historical trajectories. In the southern portion of the peninsular, a large documentary corpus, both indigenous and foreign, and the presence of inscribed coins and cave inscriptions, led scholars to assign the term "Tamilakam" to the material record of the region. Tamilakam corresponds to the territory that includes the present-day states of Kerala and Tamil Nadu (Figure 3-1) and can be associated with epigraphic, numismatic, and textual records that are written in a version of Old Tamil. It is thus customary for archaeologists working in South India to refer to the material culture associated with late Iron Age/Early Historic Kerala and Tamil Nadu as being "Tamil", although it is questionable whether the material culture of this region is in fact distinct from the material culture of the rest of peninsular India. Given this general characterization, however, and the enduring impact it has had on reconstructions of early South Indian society, this study will concentrate on the archaeological data of this time period from the states of Kerala and Tamil Nadu, in a preliminary effort to identify how the material culture can throw light on the nature of Tamilakam as a separate cultural region.

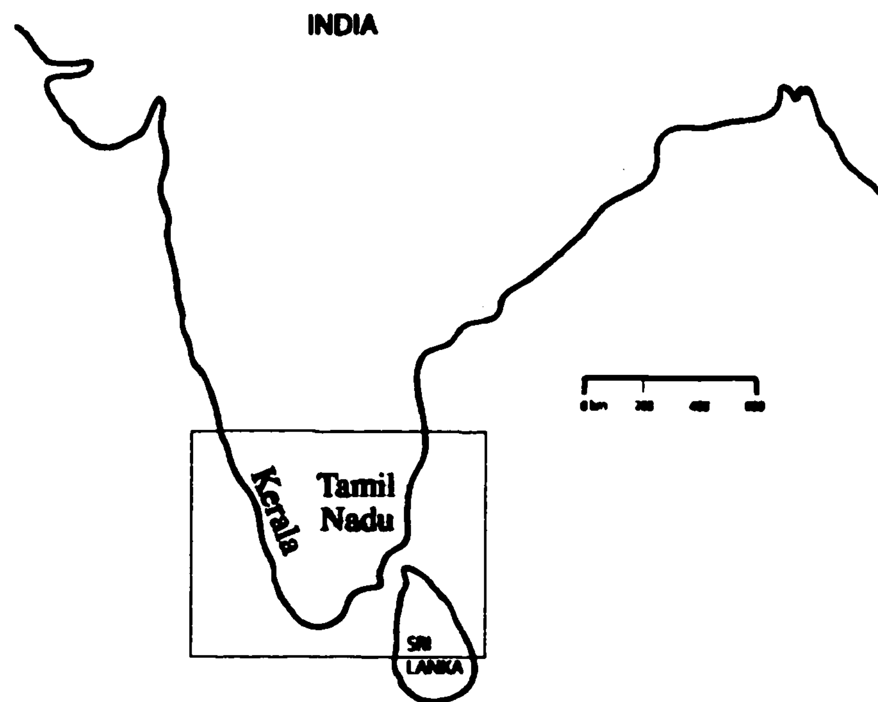


FIGURE 3-1: Location of Kerala and Tamil Nadu

Geography of Tamilakam

Ancient Tamilakam can be divided into two modern-day geographic regions: the states of Kerala and Tamil Nadu, which are separated by the Western Ghat mountain ranges. The geographical configuration of each state will be considered in turn.

The state of Kerala is a narrow strip of land at the southernmost portion of the western littoral and incorporates the Malabar Coast (Figure 3-2). Forty-one rivers flow westward from the mountains to the coast; the most important and well known river system is the Periyar. Spate and Learmonth (1967: 675) describe three sub-regions for Kerala: alluvial coastland, low laterite plateaus and foothills, and gneissic highlands, but others have distinguished four physiographic zones: the alluvium/coastal plain, the lowland zone from 30 to 300 meters, the midland zone from 300 to 600 meters, and the highland zone from 600 to 2500 meters (Ramachandran Nair 1986: 39).

The alluvium/coastal section includes the great expanse of marshes, lagoons, and backwaters which extends for 341 kilometers from the mouth of the Ponnani River down to Trivandrum (Spate and Learmonth 1967: 675). The coastal plain is vast with a low relief, mostly four to six meters above sea level, and is characterized by numerous beach dune ridges that run roughly parallel to the shoreline. The backwaters run north to south and provide easy transport and communication from north to south.

Between the coastline and the Ghat mountains is the lowland zone, composed of a mixture of rivers and streams, flood plains, and rock-cut terraces. The midland region is characterized by soft undulating slopes interspersed with valleys that grow progressively wider as ones moves towards the coast. Hills merge into shallower slopes and valleys that end abruptly in cliffs bordering the lowlands. Rivers and streams flow west in

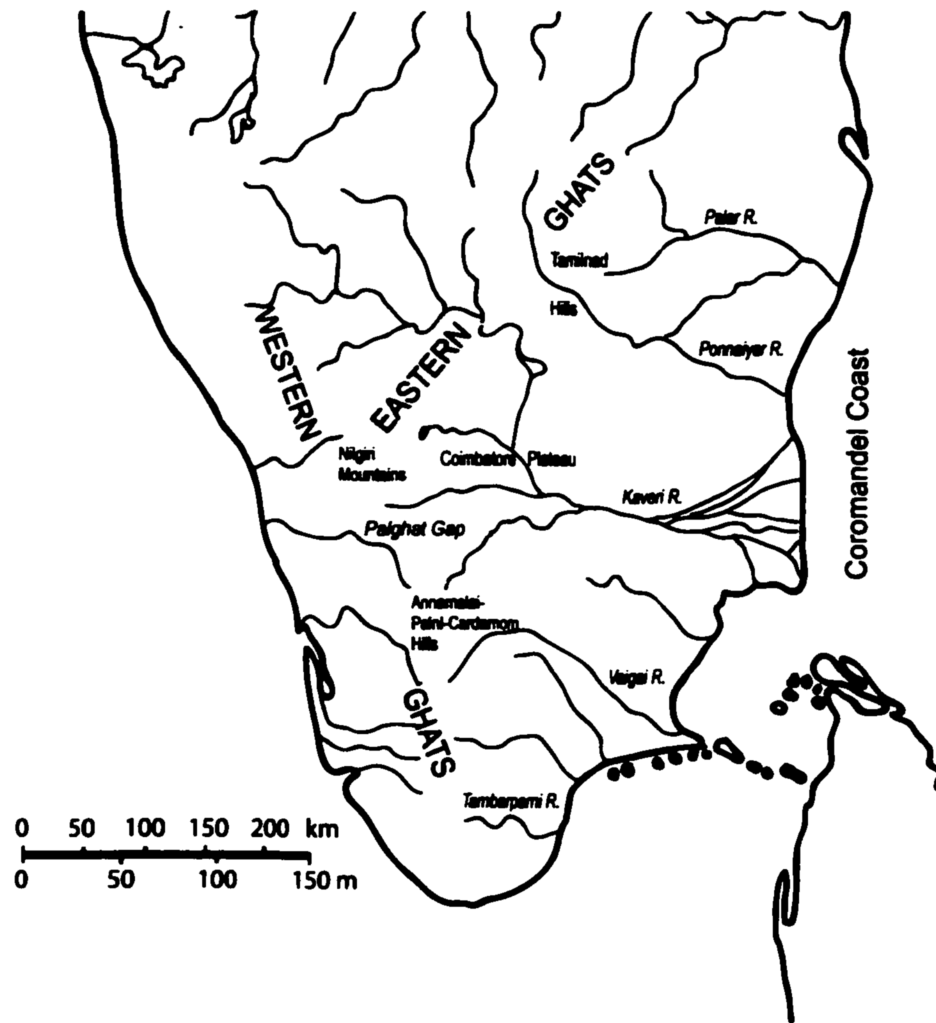


FIGURE 3-2: Kerala—Sites Mentioned in Text

winding courses, and the midland region is almost entirely under laterite cover (Ramachandran Nair 1986: 43). The lateritic portion form plateaus of mostly grass and scrub, into which project spurs of the Anamalai-Cardomom hills. This seaward scarp of the Western Ghats has allowed the cultivation of tea, coffee, and cardamom.

The highland zone is represented by a part of the Western Ghats, a steep and rugged mass of hills rising to 2000 meters above sea level. In Kerala, the Ghat mountains include the Nilgiri, Anamalai, Palni, and Vershanad-Andipatti ranges and are represented best by a succession of lofty hill of varying elevation separated by deep valleys and small plateaus (Ramachandran Nair 1986: 40). The Western Ghats for the most part run parallel to the coast, but once they reach the northern reaches of Kerala state, the mountains turn sharply eastward. These gneissic highlands are forested, they receive heavy rainfall and are the site of Kerala's plantation agriculture.

The mountain ranges comprising the Western Ghats have their own characteristics. The Nilgiris form a compact plateau of about 2,590 kilometers with a summit level of 1,830 to 2,440 meters, rising with extreme abruptness on all sides. They have a botanic realm of their own—half the area is forested—but there are also open rolling downlands on which modern tribal Todas graze their buffaloes (Spate and Learmonth 1967: 688-89). The Anamalai-Palni-Cardamom hill groups are somewhat more complex than the Nilgiris. In the northwest, the hills extend out in long southeast-northwest ridges. The western flanks are mostly dotted with plantations and are too rainswept to have much settlement (Spate and Learmonth 1967: 690). In Kerala, the northernmost point of the Western Ghats is the Nilgiri mountain range. Just to the south of the Nilgiri plateau is the only major break in the length of the Western Ghats, known

as the Palghat Gap. The Gap is about 20 miles from north to south and allows access between the coasts at 1000 feet above sea level. The northern slopes to the Palghat Gap are quite steep, as are to some extent the eastern and southern flanks.

The Western Ghats are largely responsible for the striking difference in rainfall between Kerala on the west and much of Tamil Nadu on the east. To the west, the monsoon is heavy, averaging about 80 inches, and to the east, the rainfall is usually less than 40 inches. This difference is reflected in the vegetational landscape: the western strip and western edges of the Ghats are covered in dense vegetation. The forests contain numerous types of wet evergreen tropical forest trees, including bamboo, teak, rosewood, and ironwood (Sastri 1966: 39). The western shore has coconut, betel nut, and palm. There is abundant cassia and cardamon in the jungles, and black pepper thrives in this moist environment.

Tamil Nadu is somewhat isolated from the Deccan plateau by the Eastern Ghat mountain range, which takes a western turn at the northern border of the state to converge into the Western Ghats (Narasimhaiah 1980: 6). The northwestern part of the state may be thought of as a continuation of the Deccan plateau, and the northeastern region is filled with outliers of the Eastern Ghats (Figure 3-3). Compared to Kerala, the state of Tamil Nadu exhibits much more regional geographic diversity. Very roughly, Tamil Nadu can be divided into the uplands and the eastern coastal plains. The uplands are bordered on the west by the Nilgiri Mountains and Anamalai hill range and slope gradually eastward; all the rivers of Tamil Nadu run eastward from the mountains to the coast. The most important river systems are the Kaveri, the Vaigai, the Ponnaiyar, and Palar, and the Tambarparni. The coastal region is characterized by a straight shoreline with well-

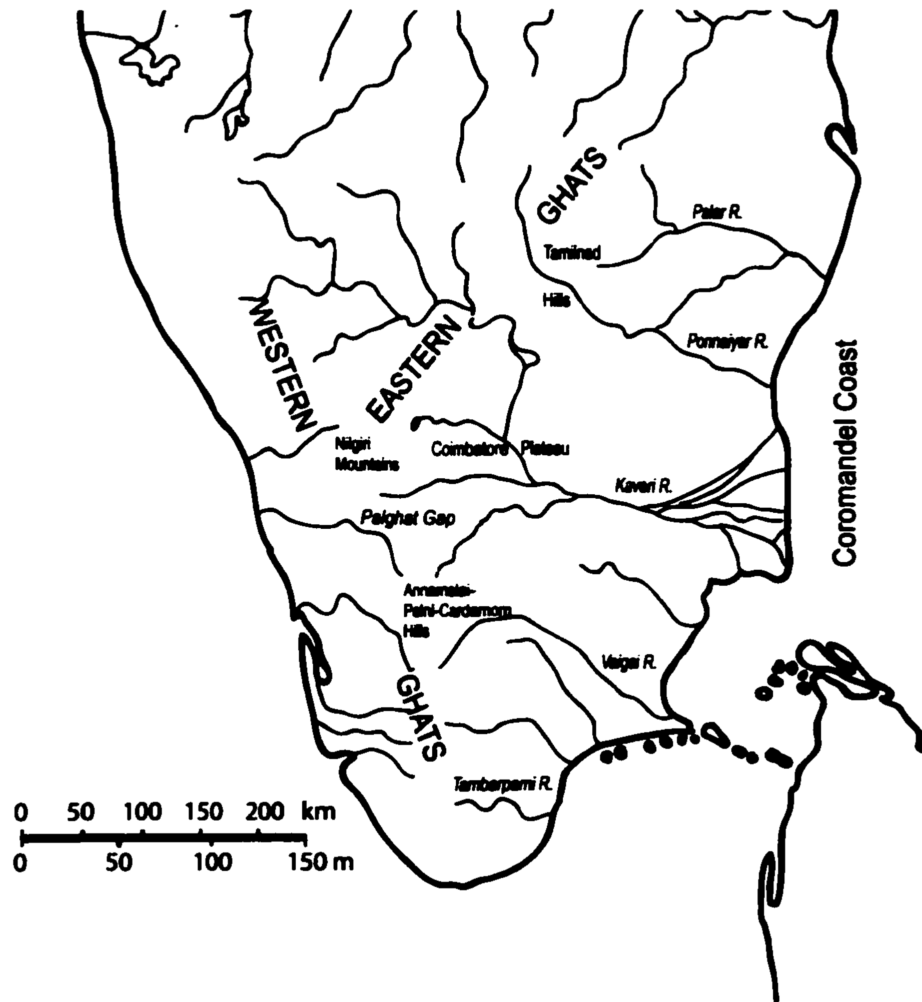


FIGURE 3-3: Tamil Nadu—Sites Mentioned in Text

defined beaches. The coast forms a plain rising gradually westwards to the Eastern andWestern Ghats, although the topography is broken by numerous hills (Narasimhaiah 1980: 11)

Spate and Learmonth (1966) have divided the Tamil Nadu landscape into six major subregions: the Coromandal coastal plain, the Tamilnad hills, the Ponnaiyar/Palar trough, Kongunad, the Cauvery Delta, and the dry Southeast. The Coromandel coastal plain is centered around modern Chennai (Chennai Anna and South Arcot districts, with adjacent parts of North Arcot and Tiruchirappalli districts) and is a lowland zone below 500 feet and 80 to 95 kilometers wide (Spate and Learmonth 1967: 741). Incorporated into this region are the Palar and Ponnaiyar river basins. The Tamilnad hills are a region that back up the Palar and Kavery coastal plain and are a discontinuous line of highland, made up of small of bold hill masses. The steep flanks of these hills are forested, but there is also a large agricultural population growing ragi, cholam, gram, oilseeds, and fruit, and some terraced rice. The Ponnaiyar/Palar trough is an irregular pediplain between 305 to 395 meters that separates the Tamilnad Hills from the Karnataka portion of the Ghats (Spate and Learmonth 1967: 749-52). The Kongunad region comprises the Coimbatore plateau and Palghat. The waterways of the Palghat Gap comprise mostly the Ponnani River headwaters. To the east of the Gap, three rivers—the Bhavani, Amaravati, and the Noyyal—each about 100 miles long, drain into the Kaveri River (Spate and Learmonth 1967: 758). The Kaveri delta lies mostly in Thanjavur district and stretches 129 kilometers from north to south. The fertile alluvial soil of this region extends as far west as Tiruchirappalli; rice is the dominant agricultural element. The principal

characteristics of the dry Southeast region are its low rainfall and its role as the main cotton-producing region of Tamil Nadu (Spate and Learmonth 1967: 771).

Review of Archaeological Research in Kerala and Tamil Nadu

Before addressing in detail the nature and results of the regional survey of the Palghat Gap, it is necessary first to situate this study within the larger context of archaeological research from the greater culture region of Tamilakam. The archaeology of Kerala and Tamil Nadu is extensive, but not without its limitations, which have contributed profoundly to the limited number of interpretive studies available for the region.

Fragmented Research

Two factors that contribute to the difficulty of formulating a comprehensive analysis of the material culture of early Tamilakam are the fragmentary nature of the data and the relatively poor documentation of much of the archaeological research. By and large, archaeological research has been divided along several distinct lines—studies on the Iron Age megalithic burials, studies concentrating on the Early Historic urban settlements that are either inland or along the Tamil coast, and separate studies of the numismatic and epigraphic evidence, respectively. Such a degree of compartmentalization of research for early Tamil society has led to a corresponding compartmentalization of perspectives of the Tamil past. As Gurukkal (1995) as observed:

> "The tendency in past writings on the early historic period in South India was to identify cultures and ethnic groups in association with the major source categories. Hence the identification of the megalithic people/culture or iron age people/culture based on the archaeological source, association of heterodox religious groups with the early epigraphical source, discovery of a maritime civilization behind the Graeco-Roman sources and numismatic evidence, and the idea of a Sangam society/people based on Tamil anthologies...the fact that all of them contain clues to the different phases of one and the same social formation, was not properly understood" (Gurukkal 1995: 239-40).

Another symptom of the scholarship in Tamil South India is the common tendency to discuss archaeological evidence from Kerala and Tamil Nadu as if each state comprised a culturally or politically distinct unit in the past, when in fact such boundaries are not at all well established for early South India. This divide in the literature prevents archaeologists from considering the artifacts and distribution data in their entirety. For example, most archaeologists accept that the Chera polity incorporated much of the coastal Kerala and that its inland capital was maintained at Karur, in present-day Tamil Nadu. Yet, to date, no archaeologist has chosen to study the material culture of the Chera polity in its entirety, in part because the region straddles modern-day Kerala and Tamil Nadu.

Inadequate Documentation

For the most part, published information on the Iron Age sites tend to be brief reports in journal describing the broad characterizing features that are based on existing classificatory systems for ceramics and other artifacts. Often these finds are the result of broad explorations that take place within in a district or *taluk*[2]. Although it is common for burials to occur in clusters or complexes, it is rare to find a discussion of the

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[2] A *taluk* is a sub-district political division.

distribution of the monuments and their relationship to the surrounding landscape. When detailed excavation reports are available, these again tend to focus on existing classification systems for the burials and artifacts, and reveal little new information on patterns and systems. It is rare to have artifacts counted or for provenance to be recorded, or even for detailed descriptions of the materials to be made. Excavations on Early Historic settlements fare a little better, and published reports take advantage of the fact that many of these settlements have literary references supporting their existence and describing some part of their character.

Poor Chronological Resolution

The issues of early Tamil chronology and the periodization of sites and occupational phases are inextricably woven in with the identification of sites and essentially dependent on the culture-historical nature of archaeological research in South India. There are unfortunately no clear sequences in artifacts or other archaeological features that have permitted the development of internal relative dating sequences. Relatively few radiocarbon dates are available, and it is not uncommon for their provenance to be suspect. As with the rest of South India, the settlement sequences for excavated sites in Tamilakam are generally assigned to one of four rather poorly defined categories: Neolithic, Iron Age/Megalithic, Early Historic, and Medieval.

The chronology for these four phases is based on two factors: 1) Wheeler's legacy of stratigraphical excavation and 2) association with better-dated foreign artifacts. Wheeler established a chronological framework for South India that has had an enduring impact on the way that subsequent investigations have been conducted. Using a three-

phase periodization at the Deccan sites of Brahmagiri and Chandravalli, Wheeler (1947-48: 202) identified three phases of occupation: 1) the Stone Axe culture, which he dated from the early first millennium BC to the beginning of the second century BC, which overlapped somewhat with the succeeding 2) Megalithic (or Iron Age) culture, which began after 200 BC and ended around the middle of the first century AD, which in turn overlapped with the final phase, 3) the Andhra (or Early Historic) culture, dating from the middle of the first century AD to the third century AD. This general framework—the identification and dating of these phases, as well as their association with various "type" ceramic categories—has been adopted in one form or the other by most later archaeologists in South India and has greatly influenced the manner in which data has been interpreted. The culture historical approach of much of South Indian archaeology can in large part be attributed to Wheeler's initial classifications, and has resulted in new sites being incorporated into the existing classificatory systems, regardless of their individual artifact patterning. In recent decades, these chronological categories have been called into question and are being carefully re-evaluated (e.g., Begley 1983, Morrison 2001).

The Iron Age in Tamilakam

The Iron Age in Tamilakam and elsewhere in South India represents an important development in the history of South India. As in the rest of south India, the changes associated with the transition between the Southern Neolithic and the Iron Age include an increase in the number of sites and the introduction of a set of new ceramic types. Also,

for the first time, metal artifacts are found, iron being the most common. Beads made of shell, terracotta, and semiprecious stones are found in large quantities during this phase. Other developments associated with the Tamil Iron Age are discussed in the following sections.

The Peninsular Iron Age

Around the end of the second millennium and the beginning of the first millennium BC, changes take place in the south Indian material corpus. This period witnessed the beginning of iron smelting and the gradual increase in the use of iron. A new ceramic was introduced, known as Black and Red Ware. Another contemporary development is a complex of burial patterns that are commonly referred to as "megalithic." Although these monuments are distributed throughout South Asia, the vast majority are located in the peninsular region.

Iron Age Megaliths

In south India, the Iron Age is associated most closely with the hundreds of burial/commemorative structures that span the peninsula. Popularly and collectively referred to as "megaliths", their association with iron artifacts has led archaeologists to refer to the Iron Age as the "Megalithic" period. The distribution of these graves is vast and covers numerous culture regions in peninsular India and Sri Lanka (Figure 3-4). The first published article on the megalithic grave complex appeared in 1823 by Babington (1823), but it was probably the work of Meadows Taylor in the mid-1800s that focused scientific attention on the burials (Taylor 1853). Ranging from urn burials to pit circle

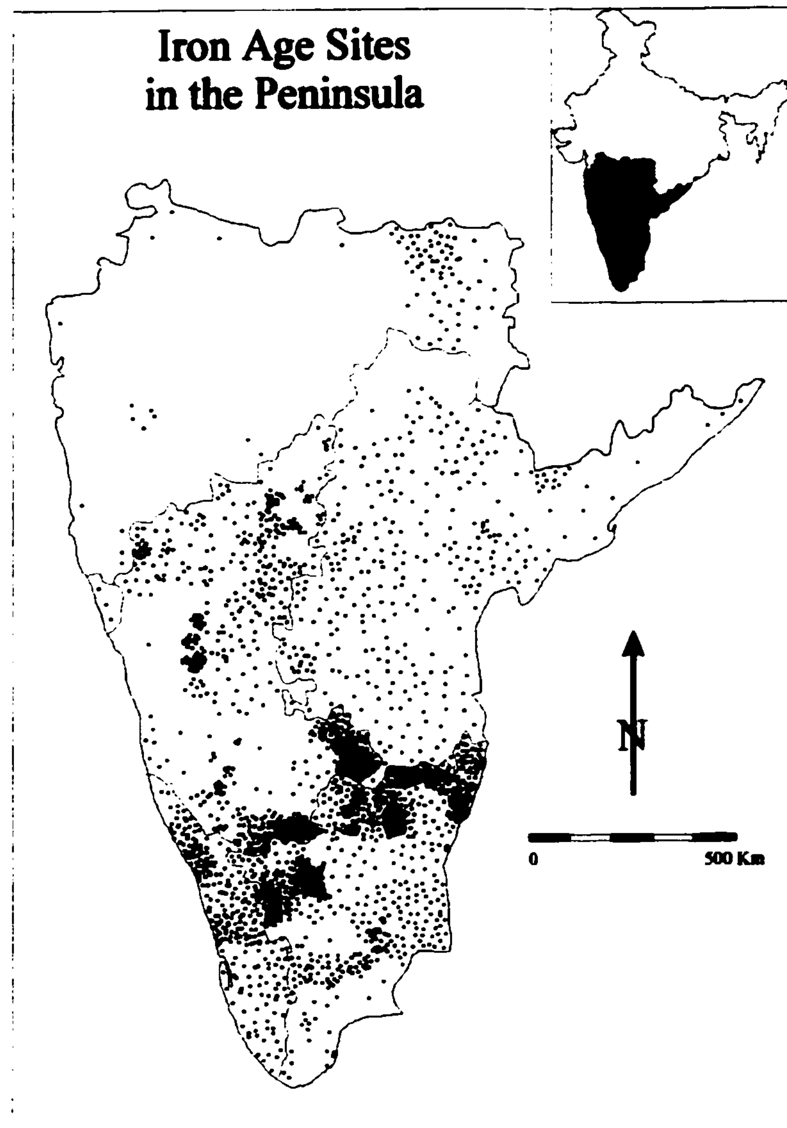


FIGURE 3-4: Iron Age Sites in Peninsular India

graves to cist graves and rock-cut chambers, the complex displays a general uniformity in artifact assemblage, which includes a burnished black-and-red ware, beads, and objects of iron (Leshnik 1974, Mehta and George 1978, Moorti 1994, Sahney 1965, Satyamurthy 1992b). The megaliths do not display a perceptible evolutionary sequence and the iron objects and other artifacts exhibit a noticeable uniformity (Chakrabarti 1999: 80). Studies vary in their estimates of the date of origin of the grave complex, ranging from the end of the second millennium BC (Allchin and Allchin 1982: 341) to the middle of the first millennium BC (Sahney 1965), and no consensus exists for understanding how they arose (Allchin and Allchin 1982: 341), although the data suggest that the earliest megaliths date to early in the first or at the end of the second millennium BC (Possehl and Gullapalli 1999: 158). Recent research by Morrison (2001) suggests that that dates for megalith construction can be pushed back to the Neolithic period, and it has been argued that the traits established in the Neolithic continue into the Iron Age (McIntosh 1979: 466). Controversy also centers on the direction of the spread of the megalithic graves, whether from north to south (Sahney 1965) or vice versa (Leshnik 1974). Despite the inconclusive data, in general the Iron Age of South India is broadly assigned to the first millennium BC, based on the grave complex, the ceramic evidence, the and appearance of iron (Allchin 1995: 137).

Megaliths and the objects allied with them—Black and Red Ware, beads, bangles, terracotta figures, metal implements, etc.—appear throughout the peninsula, extending northward as well as south into Sri Lanka, and they have been treated by archaeologists and historians alike largely as a single coherent phenomenon. But (as will be discussed in the next chapter) the social milieu of the people who made the megaliths was

apparently not so uniform. The historical argument is persuasive which says that Tamilakam and the Deccan, for example, faced different geographical, economic, and political issues (Champakalakshmi 1996, Morrison 1995, Thapar 1992). The subregions went through different historical processes during the Late Iron/Early Historical period and hence must be confronted first as distinct units before being considered as a whole. As Possehl and Gullapalli have argued, the Early Iron Age in South Asia is regional in character (Possehl and Gullapalli 1999: 158). Although similarities in material culture seem to span the peninsular India, it is far from being an homogenous phenomenon. To appreciate subregional historical development in Tamilakam, it is necessary to approach the megalithic phenomenon as something more than just widespread evidence of burials or burial markers for some social subgroup, and instead as an activity or practice that may have significance relevant to localized aspects of early South Indian life.

The configuration of society associated with the megaliths and the peninsular Iron Age, including the question of social complexity and social diversity, is not well understood at present. Most archaeological attention has focused on the more visible megaliths, and the associated habitations have, until recently, received far less attention (Brubaker, in press: 8). The number of habitation sites so far investigated is fairly small and excavations have been limited (Moorti 1994: 6). The apparent paucity of Iron Age settlements has led to the suggestion that Iron Age populations were nomadic and exploited a wide range of ecological habitats (Kennedy 2000: 342). Deo has proposed, however, that Iron Age communities engaged in a mix of pastoralism and agriculture as their economic base, as evidenced by the iron agricultural tools, bones of domesticated animals, and charred grains remains recovered from burial contexts (Deo 1985: 450-51).

Questions about the origin and ethnic identity of the communities associated with megalith construction remain unanswered. It was believed, until recently, that the apparent uniformity of iron implements, black and red ware pottery, and megalithic construction indicated a corresponding genetic homogeneity of the Iron Age people of peninsular India (Kennedy 2000: 342). But research on human skeletal material from megalithic sites demonstrates that Iron Age populations in South Asia were relatively heterogeneous (Kennedy and Levisky 1985: 461). The exhaustive study of published skeletal records has established the existence of a degree of variability in the biology of the megalith builders. As Kennedy asserts, "...the megalith builders were never members of a single homogeneous biological group of humankind but instead were parts of genetically heterogeneous enclaves exhibiting regional differences" (Kennedy 2000: 354). The argument for biological diversity among Iron Age populations supports the thesis put forward here that a corresponding degree of cultural diversity may also be present among the multiple megalith-building communities of South India.

Previous Studies of the Tamil Iron Age

Discussions of the Tamil Iron Age tend to occur most often in the context of the wider South Indian Iron Age, which is not surprising, given the general uniformity of artifacts, burials, and settlements across the southern portion of the peninsula. But whether such studies isolate Kerala and Tamil Nadu or consider South India in general, a common characteristic of all of them is to interpret Iron Age social, political, and economic structures on the basis of presence or absence of certain artifact categories. To some extent, this is due to the fragmented and incomplete nature of research, but in large

part it is a legacy of the predominantly culture-historical approach of most archaeological investigations in the subcontinent.

Most archaeological studies to date have focused on single sites, or a single class of artifacts, in order to make generalizations about the Tamil past. Studies of the South Indian Iron Age are also often descriptive, ranging from lists and brief descriptions of burials from various regions (e.g., Rao 1988, Narasimhaiah 1980) to descriptions of various ceramic categories (e.g., Gurumurthy 1981). This is not to say, however, that no synthetic or interpretive studies of the South Indian Iron Age are available. Leshnik's work, for example, considers the origin, evolution, and chronological, typological, and geographical development of megalithic monuments in South India (Leshnik 1974). Studies such as those by Moorti (1994) and Brubaker (in press) have significantly advanced the study of Iron Age remains in South India. Moorti's analysis of South Indian megaliths situates the monuments in the context of various environmental variables and possible subsistence strategies, and attempts to extract ideas about social distinctions (Moorti 1994). Moorti studied differentiation among the megalithic artifacts based on his interpretation of the artifacts as predominantly technomic, sociotechnic, or ideotechnic (Moorti 1994: 47). His attempts to synthesize a vast body of data is noteworthy, but severely hampered by lack of systematic published data—as, for example, his efforts to examine skeletal material in order to relate the artifacts to the individuals buried in the monuments.

Brubaker focuses on the entire South Indian megalithic complex to interpret the socio-political dynamics of Iron Age societies (Brubaker, in press). Using rank-size analysis of cemetery size from seven subregions in South India, Brubaker concludes

tentatively that the Iron Age landscape of South India comprised a multitude of small, predominantly locally oriented socio-political systems of varying scale and geographic extent (Brubaker, in press). Work is still needed to understand these regional complexes and the contacts within and between them (Deo 1985: 449).

Main Physical Characteristics of Iron Age Megaliths

Though published descriptions imply that there is a fair amount of variation in megalithic architecture, in general they all seem to employ a few basic elements that were combined to produce a range of monuments (Brubaker, in press: 3). For monuments from Kerala and Tamil Nadu, these features can be divided according to those that are visible above ground and those that are generally subsurface. Above-ground features include stone circles, capstones, cairns, dolmens, rock-cut caves, umbrella stones, hoodstones, and menhirs. Subsurface features include urn burials, pot burials, slab cists, cist circles, and sarcophagi.

Stone circles are one of the most common of the visible megalithic features in Tamilakam. They are composed of large granite or laterite boulders, sometimes dressed, arranged in one or more concentric circles and usually surrounding another feature such as urn burial or slab cist. Capstones (also known as *topikals*) are hemispherical stones used as lids on burial urns (Gurukkal and Varrier 1999: 16). Cairns appear as circles or heaps of rubble often marking the location of a pit or stone burial. Dolmens (or dolmenoid cists) are stone slabs arranged above ground in a square or rectangular shape (sometimes with multiple chambers) supporting a capstone. Rock-cut caves are carved-out subterranean chambers dug into laterite rock and accessible by stone stairs or a

circular aperture. Umbrella stones (or *kodikals*) are mushroom-shaped monuments, with upright boulders supporting a large dressed hemispherical boulder. Hoodstones are dome-shaped laterite blocks covering an underground circular pit cut into natural stone. Menhirs are tall monolithic blocks placed vertically into the ground and stretching from three to sixteen feet.

Urn burials are large pyriform earthenware vessels, usually handmade and buried in a pit in which skeletal remains and/or burial goods may also be deposited. Although not "megalithic" in character, the contents and context of urn burials place them within the larger megalithic tradition. The same is true for pot burials, which are similar to urn burials but consist instead of smaller burial pots. Slab cists are similar in configuration to dolmens—slabs arranged at right angles to form one or more enclosed chambers—except that they are buried. When the stone slabs are arranged in a circular formation, they are referred to cist circles. Sarcophagi are oblong, legged vessels with lids, made of terracotta, in which skeletal material is sometimes deposited.

Dating Tamil Iron Age Remains

The dating of megaliths is a critical issue and several scholars have made attempts to place these features in chronological context. Wheeler's excavations at Brahmagiri placed them in a time bracket of 200 BC to AD 50 (Wheeler 1947-48: 200-01). Leshnik (1974), basing his analysis on a detailed typology of artifacts from the megalithic burials, assigns a date to the complex somewhere after 300 BC, an estimation now largely discounted (McIntosh 1985: 467). Reworking the same material as well as available

radiocarbon dates, McIntosh (1985) developed a six-phase classification of the megalithic material culture, ranging from 1100 BC to 100 BC.

A number of attempts have been made to develop chronological sequences for the South Indian Iron Age (e.g., McIntosh 1985, Leshnik 1972, Sahney 1965), making use of relative dating techniques. But because of the vast geographical area being covered, and the presumed deep chronological span, issues of Iron Age chronology are still open to intense debate. Radiocarbon dates obtained from Morrison's recent analysis of wood samples from Brahmagiri has yielded calibrated dates that fall between 2140 BC and 1940 BC, well within the Southern Neolithic period (Morrison 2001: 6-7). Radiocarbon dates for South India Iron Age sites may thus range from as early as the first part of the second millennium BC to as late as tenth century AD[3], although it appears as if the majority fall within the first millennium BC (Moorti 1994: 5).

TABLE 3-1

Radiocarbon Dates for Megalithic Sites in Tamilakam

SITE	SOURCE MATERIAL	SAMPLE CODE	C14 DATE	CALIBRATED DATE[4]/ ONE SIGMA RANGE/ TWO SIGMA RANGE	REFERENCE
Togarapalli	charcoal	PRL-135	2150 ± 110 BP	Cal 190 BC/ 377 BC - 4 BC/ 403 BC – AD 75	IAR 1974-75: 75
Togarapalli	charcoal	PRL-134	2180 ± 100 BP	Cal 324 BC/ 384 BC – 61 BC/ 404 BC – AD 47	IAR 1974-75: 75

[3] For Adichchanallur, in Tamil Nadu (Agrawal DP et al, as quoted in Begley 1967: 108)
[4] Calibrated radiocarbon dates were determined using the CALIB 4-3 program.

Paiyampalli	charred grain	TF-350	2265 ± 105 BP	Cal 379 BC/ 402 BC – 199 BC/ 757 BC – 52 BC	IAR 1965-66: 88
Paiyampalli	charcoal	TF-825	715 ± 100 BP	Cal AD 1285/ AD 1222 – AD 1389/ AD 1066 – AD 1420	IAR 1968-69: 73
Paiyampalli	charcoal	TF-828	2160 ± 100 BP	Cal 186 BC/ 377 BC – 50 BC/ 401 BC – AD 54	IAR 1968-69: 73
Paiyampalli	charcoal	TF-824	810 ± 95 BP	Cal AD 1231/ AD 1074 – AD 1286/ AD 1021 – AD 1388	IAR 1968-69: 73
Paiyampalli	charred grain	TF-823	2590 ± 105 BP	Cal 796 BC/ 829 BC – 544 BC/ 969 BC – 404 BC	IAR 1968-69: 73
Paiyampalli	charcoal	TF-827	3635 ± 110 BP	Cal 1998 BC/ 2188 BC – 1830 BC/ 2302 BC – 1691 BC	IAR 1968-69: 73
Paiyampalli	charcoal	TF-832	795 ± 100 BP	Cal AD 1257/ AD 1161 – 1292/ AD 1022 - 1394	IAR 1968-69: 73
Paiyampalli	charcoal from sealed pit	TF-829	1015 ± 105 BP	Cal AD 1019/ AD 899 – AD 1158/ AD 778 – AD 1250	IAR 1968-69: 73
Appakallu	charcoal sample from sealed pit	BS-38	2235 ± 140 BP	Cal 259 BC/ 404 BC – 108 BC/ 763 BC – AD 55	IAR 1977-78: 89
Vallam	charcoal	PRL 1111	2420 ± 120 BP	Cal 445 BC/ 781 BC – 390 BC/ 813 BC – 202 BC	IAR 1987-88: 148
Vallam	charcoal	PRL 1110	2920 ± 140 BP	Cal 1126 BC/ 1372 BC – 917 BC/ 1490 BC – 803	IAR 1987-88: 148

				BC	
Vallam	charcoal	PRL 1109	2980 ± 110 BP	Cal 1196 BC/ 1389 BC – 1013 BC/ 1491 BC – 901 BC	IAR 1987-88: 148
Pappinayakkanpatti	charcoal	PRL-1965	1980±40 BP	Cal AD 43/ 38 BC – AD 70/ 51 BC – AD 124	IAR 1995-96
Kodumanal	unknown	Unknown	1950±100 BP	Cal AD 36/ 46 BC – AD 133/ 197 BC – AD 320	Rajan1994: 130
Kodumanal	unknown	Unknown	680 ± 100 AD	AD 683/ AD 668 – AD 688/ AD 663 – AD 707	Moorti 1994: 5
Adichchanalur	wood	TF-70	775 ± 95 BP	Cal AD 1265 AD 1165 – AD 1296/ AD 1030 – AD 1397	Ramachandran 1980: 141
Mangadu	charcoal	BS-958	2890 ± 70 BP	Cal 1047 BC/ 1210 BC – 941 BC/ 1365 BC – 898 BC	Satyamurthy 1992: 9
Mangadu	charcoal	BS-957	2850 ± 90 BP	Cal 1002 BC/ 1206 BC – 901 BC/ 1294 BC – 817 BC	Satyamurthy 1992: 9

For Tamilakam, twenty radiocarbon dates are available, two from sites in Kerala and the rest from Tamil Nadu (Table 3-1). Figure 3-5 shows the distribution of excavated Tamil Iron Age sites discussed in this section. The dates from the site of Togarapalli are described as coming from a charcoal sample in a "megalithic" deposit, although no further description of the excavation or the stratigraphic layers is provided. Here the two calibrated dates are 190 BC and 324 BC (IAR 1974-75: 75). At Paiyampalli, three dates

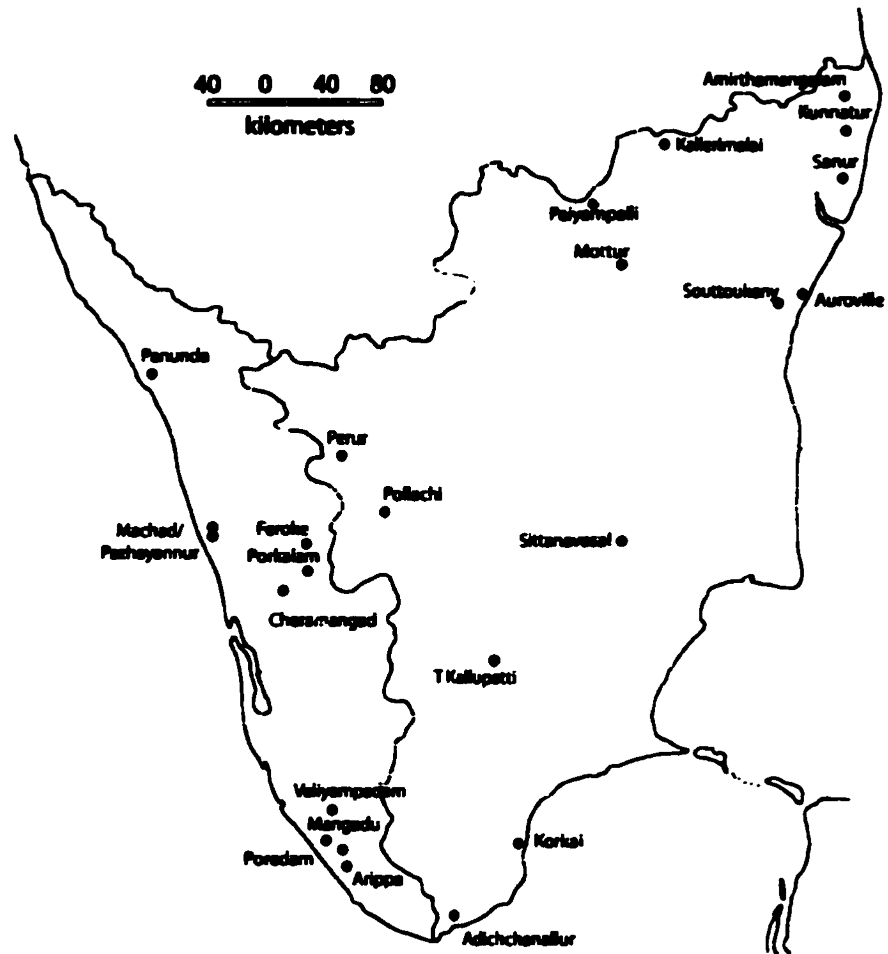


FIGURE 3-5: Excavated Iron Age Sites in Tamilakam

were calculated from charred grain and charcoal samples, both associated with Period II (termed "Iron Age" because of the associated finds of iron slag, iron ore, finished iron objects, beads, and Black and Red Ware from a series of floor levels). The calibrated dates from these samples are 796 BC, 379 BC, and 186 BC (IAR 1965-66: 88; 1968-69: 73). But it must be kept in mind that a number of other samples from Paiyampalli were tested as well, and four dates from presumably similar layers (data not provided) ranged from eleventh to the thirteenth centuries AD (IAR 1968-69: 73). Appakallu is a terrace settlement in Tamil Nadu described in the literature as a three-phase site (Megalithic, Early Historic, Medieval). A charcoal sample from a sealed pit yielded a calibrated date of 259 BC; although it is not clearly stated, the assumption is that this pit dates to the "megalithic" period (IAR 1977-78: 89). At Vallam, three radiocarbon dates from charcoal samples from layers associated with Black and Red Ware date to 445 BC, 1126 BC, and 1196 BC (IAR 1987-88: 148). A charcoal sample from a megalithic site at Pappinayakkanpatti gave a calibrated date of AD 43 (IAR 1995-96). Moorti (1994: 5), citing K. Rajan, mentions two dates from Kodumanal, both from cist burials, which calibrate to AD 36 and AD 683. A radiocarbon date from Adichchanalur, based on a sample of wood, provided a date of AD 1265, but it was considered unacceptable because of its wide divergence from "archaeological estimation" (Ramachandran 1980: 141). From Kerala, two dates are available from charcoal samples from Mangadu: 1047 BC and 1002 BC (Satyamurthy 1992: 23), supporting the common consensus that the Kerala Iron Age began around 1000 BC (Gurukkal and Varrier 1999: 128).

Iron Age Settlements

Iron Age settlements (including multi-phase sites having an Iron Age component) are recorded in Tamilakam, but interpretations of social, economic, or political activity are uncommon. The identification of many of these sites is questionable as well: many sites in Tamil Nadu and Kerala are described merely as having an Iron Age or "megalithic" component, a phase that seems characterized principally by a layer with 1) a high proportion of Black and Red Ware and 2) by the lack of earlier Neolithic micaceous gray ware or the ceramics commonly associated with the later Early Historic, such as Russet Coated Painted Ware and Rouletted Ware. For example, at Perur and Adiyamankottai, both three-phase sites, Period I is described as Megalithic, rather arbitrarily assigned to first to third centuries AD, and characterized only by the occurrence of Black and Red Ware, plain Red Ware, and all Black Ware (IAR 1970-71: 33-34).

Iron Age settlements have, until recently, received relatively little attention, and are in fact rare compared to Iron Age burial sites[5]. Nevertheless, a few sites in Tamilakam offer some evidence for an Iron Age settlement and provide some information on dwellings of some portion of the Tamil Iron Age population. As mentioned earlier, Appakallu is a terrace site located at the southwestern end of the Genganallur hills in Tamil Nadu. Associated with Period I (Megalithic) are not only the presence of Black and Red Ware and iron slag, but also floor levels with postholes (IAR 1976-77: 47-48). Period I from the habitation portion of the site at Kunnattur had a brick wall, terracotta drainpipes, and handmade horseshoe-shaped ovens associated with Black

[5] Both Moorti (1994) and Brubaker (in press) agree that, roughly, only about 9-11% of all Iron Age sites in South India have a clear habitation component.

and Red Ware (IAR 1955-56: 23; IAR 1956-57: 31-14; IAR 1957-58: 37-38). Period II at Paiyampalli was termed "megalithic" by its excavators, based on the radiocarbon dates, the presence of Black and Red Ware, and large quantities of iron. Associated with this period were four floor levels, (made of stone chips, lime plaster, or red earth), rubble foundation walls, and postholes that suggested circular, oval, and rectangular superstructures (IAR 1964-65: 22-23; IAR 1967-68: 26-30). The megalithic habitation site at T. Kallupatti is characterized by Black and Red Ware in association with rammed earth floors and postholes (IAR 1976-77: 46-47). At Kodumanal, a habitation mound covered an area of 50 acres and yielded two occupational phases: Megalithic and Early Historical. Structural evidence for the megalithic period included a series of gravel-paved floors plastered in lime, with postholes situated along their periphery (Rajan 1994: 61). Given the absence of tiles, Rajan speculated that roofs were thatched in this period. Two of the floors had raised platforms, perhaps support for large vessels (Rajan 1994: 61).

Iron Age Ceramic Assemblages

Of the locally made ceramics traditionally associated with the South Indian Iron Age, Black and Red Ware is the earliest and most well known, as well as one of the most widely distributed. It is found in Iron Age settlements, Iron Age burials, and Early Historic sites in South India. Its most distinctive feature is the firing technique—probably a process of inverted firing, so that the upper portion of the pot turns black as a result of contact with reducing agents, and the lower portion turns red from being exposed to the air and oxidization. Several poorly defined variants of Black and Red

Ware are reported from various sites in South India, including plain, fine, coarse, painted, and white-painted (Gurumurthy 1981:122-24). Because of its wide distribution, both geographically and chronologically, the usefulness of Black and Red Ware as a regional and chronological marker is somewhat limited. Wheeler set the lower limit of the Black and Red Ware to third century BC based on the Brahmagiri excavations, a date often adopted by later scholars, as for example, at the excavations of Tirukkumpuliyur and Alagarai (Mahalingam 1970). Radiocarbon dates for associated material and strata include 250 BC from Kaveripattinam, 285 BC from Appakkullu, and 390-120 BC from Kanchipuram (Raman 1988: 31). Several site reports from Tamilakam (including Uraiyur, Alagarai, and Tirukkumpuliyur) describe two types of changes in the Black and Red Ware horizon: 1) a marked decrease in the quantity of Black and Red Ware and often an increase in the amount of Red ware or Red Slipped Ware, and 2) a change from a finely made form of Black and Red Ware to a cruder, thicker, coarser version of BRW. These patterns, however, are still too poorly recorded and understood and at this point can only be cited as a potentially useful line of study for the future.

Other Technologies

The range of metal artifacts from Tamilakam attests to the existence of several technologies. After ceramics, iron is the most pervasive find in Early South India as is testimony to the practice of iron working throughout Tamilakam. Evidence of iron smelting and manufacture is present in South India, and there are numerous deposits of iron ore are found in Andhra Pradesh, Karnataka, and Tamil Nadu. A wide range of iron implements have been recovered from both megaliths and settlements, although they are

most often reported from megaliths. Shapes include spears, daggers, knives, hooks, arrowheads, horse bits, chisels, sickles, swords, axes, rods, and nails. The presence of iron slag attests to the local manufacture of iron products. At Kodumanal, excavations within the habitation area revealed evidence at different locations of both iron smelting and crucible steel production in the form of several furnaces, crucibles and crucible fragments, and slag (Rajan 1994: 65).

Other metal technologies are indicated by the presence of copper, bronze, silver, gold and brass goods in Iron Age burials. Adichchanallur had a rich and varied corpus of funerary goods, including near two hundred vessel and ornaments made of bronze. The bronze items included sieves, bowls, ornamental lids and bowl stands. Copper in Tamilakam is found in the forms of bowls, bangles, a deer figurine, pin, an object with a bird motif (possibly part of a lid knob), a pendant, and copper rods. Gold, silver and brass items are also reported—at Kodumanal, for example, silver spiral bangles and spiral rings alternated with carnelian beads to form a necklace recovered from a cist burial (Rajan 1994: 102). Semi-precious gemstones, most often in the form of beads, are also typical of Tamil burials. Beads of carnelian (sometimes etched), and sapphire, as well as direct evidence for bead manufacture, come from sites like Kodumanal. Other bead materials include coral, glass, terracotta, and shell.

Interpreting Tamil Iron Age Material Culture

Relatively little attempt has been made in the literature to synthesize the archaeological data and to speculate on issues of social, political, and economic structures during the Iron Age phase of South Indian history, in large part because attempts to

isolate this phase of material culture are highly problematic. Furthermore, despite the range of monuments and artifacts, the quality of reporting and recording practices make it difficult to investigate region-wide or even intra-site patterns.

Despite these shortcomings, a few ideas about ancient Tamil social processes may be broached. The evidence suggests a growth in number of Iron Age settlements, compared to the number of Neolithic settlements, and perhaps increased population densities. The presence of ceramics, iron and copper artifacts, and beads during the Iron Age imply the existence of corresponding craft industries of pottery, metalworking, and bead manufacture. The types of iron implements found in the burials suggest that at least some portion of the people was engaged activities such as farming, hunting, and warfare. Unfortunately, little is known about the precise geographical distribution or relative densities of the various kinds of iron implements, either in burials or at settlements, and therefore it is not possible at this point to attempt to understand how the communities associated with cultivation, hunting, and military activities were dispersed across the landscape.

Clearly, the principal source of potential information about the Tamil Iron Age rests with the megaliths. Given the paucity of published Iron Age settlements, attention must be given instead to the Iron Age burials. As the most visible and numerous Iron Age component in South India, it is natural to look to them for clues about Iron Age social organization. Unfortunately, excavations of these sites in Tamilakam are rather limited, and the subsequent "interpretations" rely heavily on the presence of "megalithic" ceramics (that is, Black and Red Ware) and iron. Reports rarely extend beyond descriptions of the monuments and a cursory overview of their contents. Of course, any

discussion of the megaliths themselves is somewhat misleading, since the issue has been raised that these monuments very likely have a long chronological span and perhaps extend well into the Neolithic and Early Historic phases[6]. Furthermore, it is likely that many of the monuments were used and reused many times, also suggesting a long span of use.

Variability in the Tamil Megalithic Corpus

Whatever the limitations of the data, it cannot be denied that the megaliths represent, individually and collectively, material evidence of substantial human investment in time, effort, and organization, and as such are worthy of closer attention in an effort to provide some insights into Iron Age and Early Historic lifeways in Tamilakam. And, like the studies by Moorti (1994) and Brubaker (in press) for greater South India, there are in fact variations in the Tamil material record—patterning that may provide clues to early Tamil social organization. Of course, like South India in general, there is every reason to suppose that at least some of this variability is due to the broad chronological framework within which the megaliths were constructed and used, but with little reliable radiometric and stratigraphic data, it is extremely difficult to pinpoint how and why the megaliths developed and changed over time. The degree of the diversity of South Indian megalithic graves can probably be attributed to a number of influences: distinctive regional cultural traditions; the influence of constraints or opportunities presented by local geology, and chronological differences (Brubaker, in press). It is nonetheless worthwhile speculating how the selection of certain megalith features reflects

[6] Reports for two excavated megaliths in Tamilakam—Cheramangad and Porkalam—cite the presence of possible Russet Coated Painted Ware.

differing social attributes. Whether these social attributes represent occupational, ideological, ethnic, or regional variabilities—or, more likely, some combination—has not yet been examined in any great detail by scholars working on the subject, and would require much more rigorous analysis of the data. The observations presented here, therefore, serve merely to point out possible directions for future research. They include the mortuary versus commemorative nature of the megaliths, their geographic distribution, and the degree of manpower and labor investment.

One question arises from the mortuary nature of the megaliths. In Tamilakam, about half the monuments contain some form of human remains, usually represented by fractional burials and/or charred bones. Scholars have suggested that such remains indicate secondary burials and hence a funerary ritual that may incorporate initial excarnation or burning. Intriguing information is occasionally available for megaliths, such as the report of possible child bones from Poredam (IAR 1989-90: 46), but better characterizations of the skeletal material from Tamilakam require more data.

The geographic distribution of megaliths in Tamilakam is of interest as well. Leshnik divided South India into a series of zones in his study of the monuments, and assigned present-day Kerala to one zone and much of Tamil Nadu to a second (Leshnik 1974: 33, 73). Urn burials, for example, are more common in Tamil Nadu and Kerala than in other regions of the subcontinent. Cairns and stone circles occur throughout the peninsula, but notable concentrations occur immediately to the east and west of the Palghat Gap—that is, in the Coimbatore region of Tamil Nadu and the Thrissur region of Kerala. Rock-cut caves and umbrella stones are unique to the southwestern coast, although urn burials outnumber both in that area (Leshnik 1974: 73). Explanations for

finding rock-cut caves only on Malabar Coast generally revolve around the ready availability of soft laterite rock in the region. The spatial relationship between megaliths and Iron Age habitations is not well known either for South India in general or Tamilakam in particular. As Brubaker notes, the known site distributions are the result of highly varied investigations, and there is little discussion of survey methodology in the literature, which suggests that almost all such investigations have been more intuitive than systematic (Brubaker, in press). It has been argued that the focus of future studies must be on the spatial patterning of tombs and groups and tombs within a settlement landscape, and attention must be paid to how megaliths relate to settlements and resource distribution (Moorti 1994: 6).

Although relatively little research has been done on the subject, a cursory examination of Tamil megaliths demonstrates that there was a variability in the presumed labor investment in the construction of the monuments. The monuments also differ in the amount of degree of elaboration in their construction; such diversity may indicate degrees of social distinction and status, although both Brubaker and Leshnik point out that it is not uncommon for the "simplest" burials to have the richest grave offerings (Brubaker, in press: 12, Leshnik 1974: 232). Although the information is not well quantified, one finds variability in the range, quantity, and arrangement of burial apparatus. The site of Mottur, for example, has an unusual feature—a 2.5-meter high anthropomorphic figure, carved out of granite, standing near one of the megalithic burials (Sinha 1982: 100). The figure has what appears to be a stylized neck and head, with arms curving out to the sides. This figure has been compared to similar ones in copper associated with the Gangetic Copper Hoard assemblages, but nearer analogues are reported from dolmenoid

cist burials at Kaperlagaru in Tamil Nadu and cist burials in the Wynad region of Kerala (Narasimhaiah 1980: 203-03). The presence of animal and bird bones at some burials raises questions about the possible symbolic function of animals in Iron Age mortuary activities. At Sanur, one pit contained the bones of a wolf or hyena, as well as domesticates like cattle, sheep, goat, and fowl. The first conclusion is that members of this community certainly engaged in animal husbandry, but it is unclear whether the inclusion of these bones in the burial was intentional or accidental. The excavators of Mottur report that some of the pots in one of the burials apparently contain bird bones, but no further details are supplied. Rajan reports an urn burial at Kodumanal containing the bones of a deer, along with an axe, a sword and nearly 800 etched carnelian beads (Rajan 1998: 75). Based on the position of the bones within the urn, Rajan speculates that the deer was killed, cut into pieces, and pushed through the mouth of the vessel. The sword and axe were placed above the bones, and a necklace made of the beads was put beside the sword. These finds suggest deliberate and perhaps ritualistic behaviors, perhaps associated with the occupation or status of the subgroup associated with the burials at each site.

Early Historic Tamilakam

The processes underlying the South India's transition from the Iron Age to the Early Historic periods are not well understood. The South Indian Early Historic period is associated with the earliest archaeological evidence of writing in the form of Asokan inscriptions from the third century BC. In Tamilakam, continuity from Iron Age to the

Early Historic is suggested by the fact that nearly half of the excavated sites with Early Historic levels have stratified deposits of Iron Age levels below the Early Historic levels. The onset of the Early Historic period in Tamilakam itself is also invariably associated with a single theme: South India's involvement in overseas long-distance trade, particularly with the Roman Empire (e.g., Begley and de Puma 1992; Soundara Rajan 1994; Ray 1994).

Previous Studies of Early Historic Tamilakam

Historical and archaeological analyses of material remains from Early Historic South India generally take place in the context of the long-distance maritime trade networks of which South India was a member at this time, and particularly its trade relations with the Roman Empire (Begley 1996). Early Historical trade studies on South India have focused on issues such as the presence of foreigners in the subcontinent (Ray 1988, Laeuchli 1981-84), the identification of imported objects (Ardika, et al. 1993, Comfort 1991, de Puma 1991, Devasahayam 1985), and the search for and examination of coastal trading ports and inland urban sites (Begley 1996, Gupta 1994, Howell and Sinha 1994, Gokhale 1987, Deloche 1983, Raman 1988, Rao 1969). It is not considered coincidental that many of the traits associated with social complexity—literature, urbanism, centralized political control—seem to have arisen in South India around the same time; most studies appear to accept the notion that active participation in this large maritime system had a significant impact on culture change in South India during this time (Begley 1992).

Early Historic Sites

The Early Historic phase in Tamilakam is also associated with the introduction of new material developments in peninsular India, each of which will be discussed in detail in the following sections. An important development is inscriptions on pottery and on cavern walls. Another important change is the introduction of range of artifacts of foreign manufacture: Roman coins, amphorae, and ceramics are commonly associated with the Early Historic occupation at Tamil sites and accepted as tangible evidence of the overseas trade in which South India engaged at the time. The Early Historic period is linked with the beginning of permanent architectural features, which has led South Indian archaeologists to assume the onset of urban living in Tamilakam (the sites assigned to this period are exclusively settlements), as evidenced by the number of sites, both coastal and inland, containing brick structures, ring wells, pits with drains, and possible industrial items like soakage jars, dyeing vats, and terracotta ovens. Whether these features in fact signal the development of urban life in Tamilakam is questionable, but they do represent an important change compared to the features associated with megalithic settlements. The same craft industries associated with the Iron Age phase continue into the Early Historic phase, and were perhaps supplemented by other activities such as gold working and weaving. The introduction of both foreign and local coins during this time indicates the beginnings of a monetary system of exchange. The popular images of a general flowering of life and culture during this period is also based largely on the dating of corresponding local and foreign writings, most important being the Tamil Sangam anthologies (hence the Early Historic period in Tamilakam is often referred to, by both archaeologists and historians, as the "Sangam" period.)

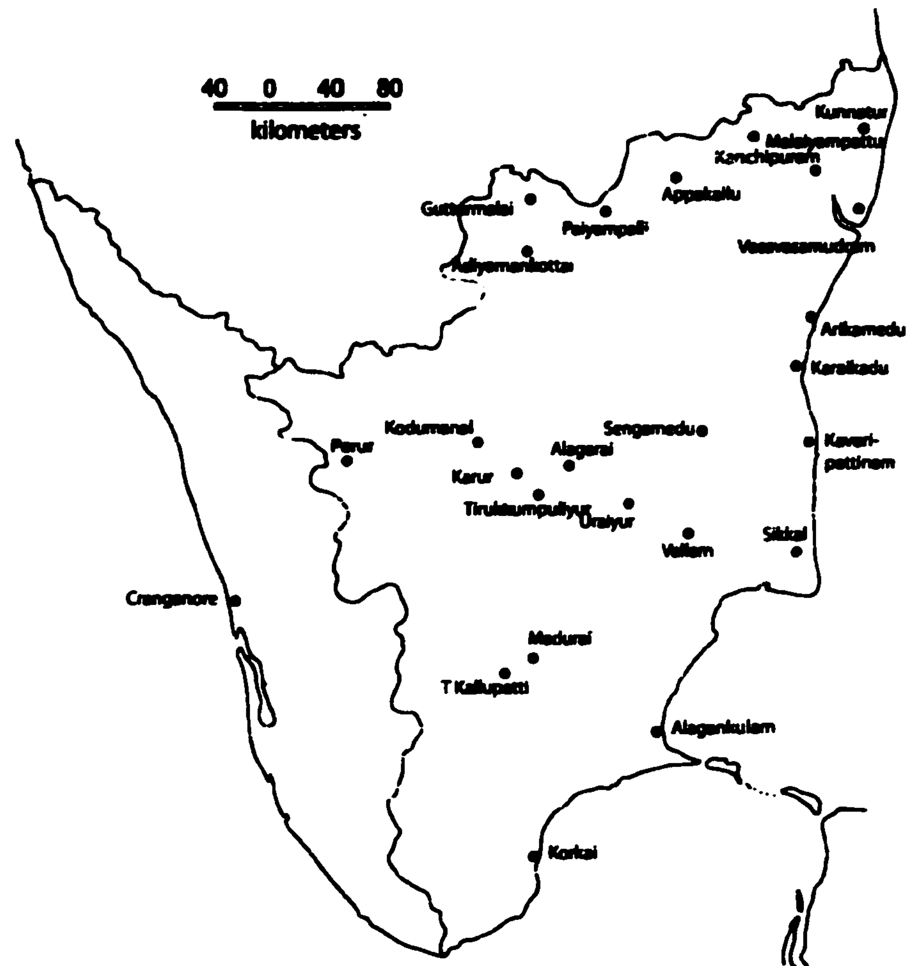


FIGURE 3-6: Excavated Early Historic Sites in Tamilakam

Dating Early Historic Sites

Before considering artifact-based dating techniques for Early Historic sites in Tamilakam, it may be useful to review the few radiocarbon dates that are available from Tamil Nadu (Table 3-2). Figure 3-6 shows the excavated Tamil Early Historical sites that are discussed in this section. A wood sample from an Early Historic deposit at Kaveripattinam yielded a calibrated date of 228 BC (*Puratattva* 8/1975-76: 114). Period II at Alagankulam was dated on the basis of associated material culture between first century BC and fifth century AD (IAR 1990-91: 68); radiocarbon dates for this period (based on charcoal samples) yielded the following calibrated dates: 190 BC, 230 BC, 393 BC, and 397 BC (IAR 1987-88: 149). A date from Korkai, tentatively considered "Early Historical" was from a wood sample and dated to 826 BC (IAR 1969-70: 68). Two Early Historic charcoal samples from Kanchipuram dated to first century BC and fifth century BC, respectively (IAR 1972-73: 66). Another Early Historic charcoal sample from Vallam dated to AD 666 (IAR 1987-88: 148; Subbarayalu 1984).

Table 3-2

Radiocarbon Dates from Early Historic Sites in Tamilakam

SITE	SOURCE MATERIAL	SAMPLE CODE	C14 DATE	CALIBRATED DATE[7]/ ONE SIGMA RANGE/ TWO SIGMA RANGE	REFERENCE
Kaveripattinam	wood sample	TF-207	2200 ± 100 BP	Cal 228 BC/ 390 BC – 113 BC/ 408 BC – AD 16	*Puratattva* 8 1975-76: 114

[7] Calibrated radiocarbon dates were determined using the CALIB 4-3 program.

Alagankulam	charcoal samples	PRL-1296	2150 ± 110 BP	Cal 190 BC/ 377 BC – 4 BC/ 403 BC – AD 75	IAR 1987-88: 149
Alagankulam	charcoal samples	PRL-1297	2210 ± 110 BP	Cal 230 BC/ 395 BC – 113 BC/ 502 BC – AD 21	IAR 1987-88: 149
Alagankulam	charcoal samples	PRL-1298	2310 ± 130 BP	Cal 393 BC/ 517 BC – 202 BC/ 792 BC – 46 BC	IAR 1987-88: 149
Alagankulam	charcoal samples	PRL-1299	2330 ± 110 BP	Cal 397 BC/ 517 BC – 213 BC/ 787 BC – 119 BC	IAR 1987-88: 149
Korkai	wood	TF-987	2680 ± 90 BP	Cal 826 BC/ 905 BC – 796 BC/ 1006 BC – 562 BC	IAR 1969-70: 68
Kanchipuram	charcoal samples	TF-1216	2085 ± 90 BP	Cal 92 BC/ 202 BC – AD 19/ 379 BC – AD 120	IAR 1972-73: 66
Kanchipuram	charcoal samples	PRL-22	2360 ± 120 BP	Cal 401 BC/ 758 BC – 260 BC/ 798 BC – 125 BC	IAR 1972-73: 66
Vallam	charcoal sample	PRL-1108	1340 ± 100 BP	Cal AD 666/ AD 623 – AD 776/ AD 537 – AD 937	IAR 1987-88: 148; Subbarayalu 1984

The paucity of reliable radiocarbon dates, their wide chronological distribution, and the extent to which they overlap with radiocarbon dates from earlier "Megalithic" levels have resulted in archaeologists relying heavily on other chronological markers for Early Historic sites. In general, Early Historic sites in Tamilakam are identified and dated based on the presence of a particular constellation of artifacts. Except for Korkai, all the so-called Early Historic sites in Tamilakam have as part of their artifact assemblage some combination of the following artifacts: Russet-Coated Painted Ware, Rouletted Ware, Roman ceramics, Roman coins, local punch-marked coins or Satavahana

coins, and/or sherds with Tamil-Brahmi inscriptions. Each category of artifacts will be discussed in the following sections.

Key Indigenous Ceramic Assemblages

Two ceramic categories have been considered key indices for the identification of Early Historic sites in Tamil Nadu. One of these is Russet Coated Painted Ware, and the other is Rouleted Ware. Wheeler referred to Russet Coated Painted Ware as "Andhra Ware" on the basis of its association with Satavahana coins at sites in Andhra territory (Wheeler 1947-48: 236), although it has been found at sites in South India with no Satavahana connection. The ceramic may be either Red Ware or Black and Red Ware, with a reddish slip that becomes highly polished or shiny red after firing. White-painted designs are seen on the exterior, generally in rectilinear or slightly curvilinear patterns (Raman 1988: 38). The firing method is the same inverted method as with Black and Red Ware. Dates for Russet Coated Painted Ware range from third century BC to third century AD. Wheeler assigned a first century AD to third century AD bracket to the ceramic based on its association with Arretine Ware and the supposedly imported Rouletted Ware at his excavations at Chandravalli and Brahmagiri (Wheeler 1947-48: 202). Until recently, archaeologists in South India largely accepted these dates. Raman, however, reported a Russet Coated Painted Ware bowl (possibly from Uraiyur), which has a Tamil Brahmi inscription dated to second century BC (Raman 1988: 39), and Morrison, based on her re-analysis of the Brahmagiri ceramic assemblage, has suggested that production of Russet Coated Painted Ware may have continued into the medieval period (Morrison 2001: 11).

The other key ceramic is Rouletted Ware, which has received a fair amount of attention of South Indian archaeologists because of its importance in dating South Indian sites. Rouletted Ware is wheel-turned fine ware and is generally black slipped; the inner flat portion of the dish carries a rouletting pattern (Raman 1988: 63). Once thought to be a Roman import, it is now accepted that the ware was manufactured locally, although the technique of rouletting may have been introduced from the west. The source of Rouletted Ware has come into question (Wheeler in his previous excavations at Arikamedu mistakenly believed that finer varieties of Rouletted Ware were imports, and that other examples were derived from Roman Arretine Ware [Begley 1983: 469; Wheeler et al. 1946: 45].) In a recent examination of the content of Rouletted Ware, Gogte (1997: 83) argued that the origin of manufacture of this ware is in fact coastal Bengal. Rouletted Ware is generally dated to the first century AD, leading later excavators to assign corresponding dates to the strata containing Rouletted Ware. However, Begley's reassessment of the stratigraphic evidence from Arikamedu suggests that the date for Rouletted Ware should be pushed back to the middle of the third century BC (Begley 1987: 461), with obvious implications for other sites in South India.

Roman Ceramics

The introduction of certain Roman ceramics is also considered a marker for the Early Historic phase in Tamilakam. Both Roman amphorae and their local imitations are found throughout South India. These Roman amphorae are generally conical with tapering sides and a long narrow vertical neck with handles (Gurumurthy 1981: 303). So far, less than 30 sites in India have yielded amphora fragments, 16 of them in Gujarat and

Maharashtra. Tchernia identified 29 sites in India with western amphora fragments. Only Arikamedu and Nevasa, however, had more than five fragments (Tchernia 1996: 154). In Tamil Nadu, amphorae fragments are found at coastal sites, the largest number from Arikamedu. Wheeler (1946: 42) found 116 sherds during his excavations at Arikamedu, and twice that number was recovered during the Begley's 1990-91 excavations (Ray 1995: 102). Also important as an indicator of trade and as a chronological marker is Arretine Ware, a delicate red slipped ware that was manufactured from the last quarter of the first century BC to the first half of the first century AD (Gurumurthy 1981: 299). When the vessel is decorated with stamped designs, it is termed "terra sigillata," which has an origin in second century BC. A type of ceramic called late African red slipped ware is reported by Nagaswamy from Alagankulam (Nagaswamy 1995: 72).

Roman Coins

Roman coin finds further document Early Historic contact with the West and serve as a useful dating device for excavations. Reports of coins from excavations are however rare; almost all published reports are of chance surface finds (Turner 1989: 13). Roman coins in or associated with excavated sites come from Arikamedu, Alagankulam, Kaveripattinam, and Karur. Fourth century AD Roman coins are reported in the vicinity of Arikamedu (Begley 1996: 113). Three Roman copper coins were found in Period I occupation levels at Alagankulam—one carried the imprint of Valentinian, AD 378-83—and, in Alagankulam Period II levels, a Roman coin of Arcadius (AD 383-408) was discovered. A Roman coin was collected from the surface at Kaveripattinam (Soundara

Rajan 1994: 119-20), and Nagaswamy reports a corroded Roman silver coin from the excavation at Karur (Nagaswamy 1995: 73)

Table 3-3

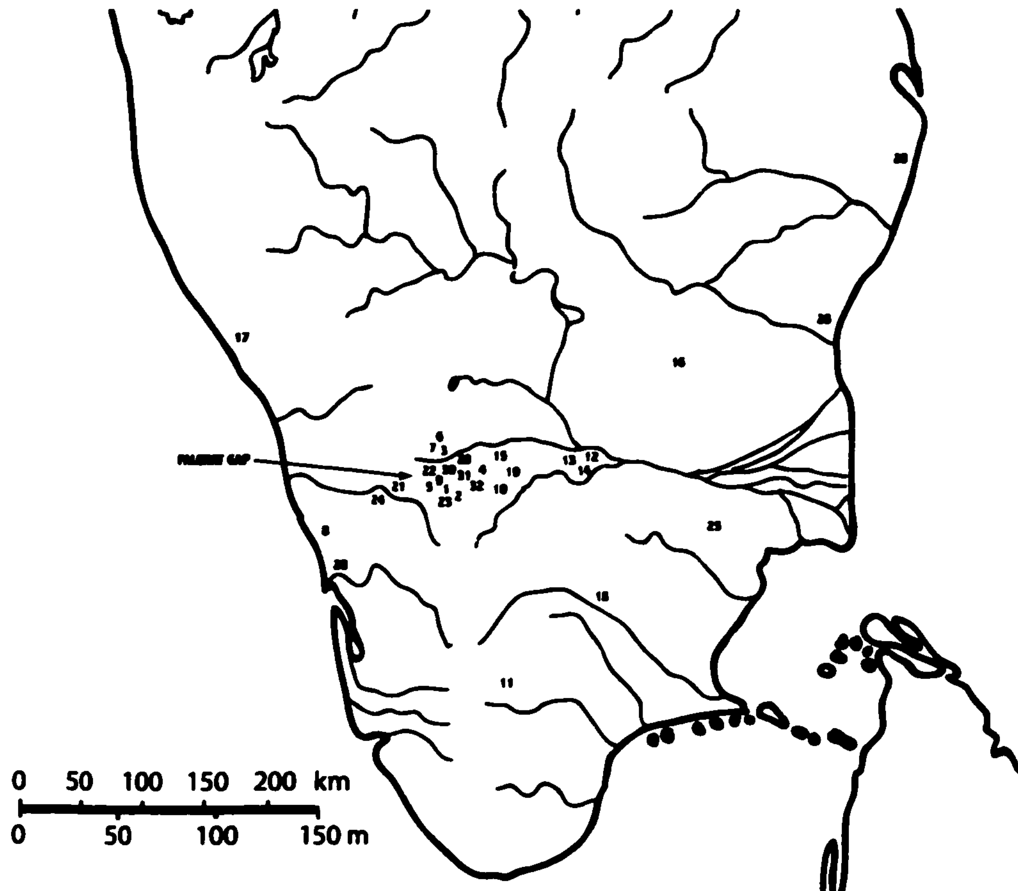
Roman Coin Hoards from Kerala and Tamil Nadu[8]

Site	District	State	Reported Description of Coins
Akhilandapuram	Coimbatore	Tamil Nadu	30 coins in a pot, all denarii. Two of Augustus, three of Tiberius
Annamalai	Coimbatore	Tamil Nadu	Denarii of Tiberius
Bishopsdown	Nilgiri	Tamil Nadu	One gold aureus
Budinatham	Coimbatore	Tamil Nadu	A hoard of 1,398 denarii
Chavadipalaiyam	Coimbatore	Tamil Nadu	Indigenous silver punch-marked coins, including a possible denarius of Augustus
Unknown	Coimbatore	Tamil Nadu	Denarius of Augustus
Unknown	Coimbatore	Tamil Nadu	Two denarii of Tiberius
Iyyal	Thrissur	Kerala	A hoard of 117 coins, 12 gold and 105 silver, possibly in a pot. Of these, 71 silver and all the gold coins were Roman; remainder were indigenous silver punch-marked coins
Kallakinar	Coimbatore	Tamil Nadu	Silver and gold coins in an earthen jar
Kaliyampattur	Madurai	Tamil Nadu	Pot containing approximately 63 Roman gold coins
Karivalamvandanallur	Tirunelveli	Tamil Nadu	Six Roman aureii
Karur	Tiruchchirappalli	Tamil Nadu	Five aureii
Karur	Tiruchchirappalli	Tamil Nadu	Hundreds, perhaps thousands of denarii in a pot
Karur	Tiruchchirappalli	Tamil Nadu	500 silver coins in a pot, including those of Augustus and Tiberius
Kathanganni	Periyar	Tamil Nadu	Hoard of 233 denarii of Augustus and Tiberius

[8] Adapted from Turner 1989.

Koneripatty	Salem	Tamil Nadu	35 Roman denarii of Tiberius
Kottayam	Cannanore	Kerala	Hundreds of gold aurei, some of the coins in a brass vessel
Madurai	Madurai	Tamil Nadu	An aureus of Domitian
Madurai Hills	Madurai	Tamil Nadu	Eleven gold coins
Mambalam	Madras City	Tamil Nadu	Pot containing 770 indigenoussilver-punched marked coins, and one Augustan denarius
Mankada	Palghat	Kerala	One gold coin of Nero
Pennar	Coimbatore	Tamil Nadu	A denarius of Augustus found in a pot full of silver punch-marked coins
Pollachi	Coimbatore	Tamil Nadu	Pot containing Roman silver coins
Poonjar	Idukki	Tamil Nadu	An aureus of Augustus and possibly other Roman coins
Pudukottai	Pudukottai	Tamil Nadu	Large hoard of aurei, perhaps 501 in all
Tondamanathan	South Arcot	Tamil Nadu	Six aureii found with 27 silver punch-marked coins
Upparipeta	unknown	Tamil Nadu	2 coins
Valuvally	Ernakulam	Kerala	Large number of gold coins in an earthenware pot
Vellalur	Coimbatore	Tamil Nadu	An earthen pot containing 522 denarii
Vellalur	Coimbatore	Tamil Nadu	Hoard of 547 denarii
Vellalur	Coimbatore	Tamil Nadu	Hoard of 121 denari and 23 "unstruck blanks"
Vellalur	Coimbatore	Tamil Nadu	Aureii of Tiberius

The majority of Roman finds have been in the form of random single or group coin hoards (see Table 3-3), rather than in stratified contexts; and while this may seem unfortunate from the point of view of datability, it raises the question about the function and use of Roman coins in Sangam society. Of the 78 Roman coins finds in India, 57 come from south of the Vindhyas, of which 32 were from the Tamil region (Ray 1995: 87). There are two main concentrations of finds in South India, one along the Krishna



Key to Sites:

1 Akhilndapura
2 Annamalai
3 Bishopsdown
4 Budinathan
5 Chavadipalaiyam
6 Coimbatore Dt.
7 Coimbatore Dt.
8 Iyyal
9 Kallakinar
10 Kalyampattur
11 Karivalamvandanallur
12 Karur
13 Karur
14 Karur
15 Kathnganni
16 Koneripatty
17 Kottayam
18 Madurai
19 Madurai Hills
20 Mambalam
21 Mankada
22 Pennar
23 Pollachi
24 Poonjar
25 Pudukottai
26 Tondamanathan
27 Upparipeta*
28 Valuvally
29 Vellalur
30 Vellalur
31 Vellalur
32 Vellalur

*site not located

FIGURE 3-7: Roman Coin Finds in Tamilakam (from Turner 1989)

River in Andhra Pradesh, and the other in Tamilakam, in the Coimbatore district of Tamil Nadu (Turner 1989: 5) (Figure 3-7). The Coimbatore hoards have generally been associated with their proximity to both the Palghat Gap, and the beryl mines in the region.

Local Coin Finds

Compared to the large and varied collection of indigenous Early Historic coins in the Deccan region of South India, coinage associated with the Tamil dynasties is relatively rare. The earliest examples of Tamil coins represent issues of the three ruling polities, the Chera, Chola, and Pandya. Coin identification is based on one of two factors: (1) the location of the finds (that is, whether found in territory thought to have belonged to one of the three polities) or (2) the images on the coins. Historical evidence suggests that the Chera dynasty was associated with the bow, arrow, and elephant, the Chola with the tiger, and the Pandya with the fish. Tamil coins are often punch marked, made of copper or silver, and sometimes described as square in shape. Of the three polities, those identified as Pandyan exhibit the greatest variety. Most Tamil coin finds come from hoards and not from stratigraphic contexts. A large but unspecified number of Pandyan silver and copper punch marked coins depicting images of elephants, horses, and fish was reported from the Madura and Tinnevelly areas of Tamil Nadu (Vanaja 1990: 261). A hoard of circular cast lead coins was also discovered in North Arcot district of Tamil Nadu; they were assigned on paleographic evidence to the second to third centuries AD (Vanaja 1990: 262).

On the rare occasion when finds of indigenous coins are reported from excavations in Tamilakam, most are not described in detail in the published reports, other

than being identified belonging to the Chola, Chera, or Pandya polities. At Kaveripattinam, for example, Soundara Rajan reported two punch marked coins, one elliptical and one circular, which he dated to first century BC (Soundara Rajan 1994: 119). Several punch marked coins were also found in the Amaravati River bed near the site of Karur—mostly now in private collections (Nagaswamy 1995: 28). Nagaswamy describes them as Chera inscribed coins; they carried the portraits of kings and Chera names. One had the legend "Kolippurai"; another silver coin had the legend "Makkotai"; and another silver one had the legend "Kuttuvankotai"; and a fourth carried the legend "Kolli Iruporaiyan". According to Nagaswamy, the portraits coins resemble the Roman coins (Nagaswamy 1995: 9), but it is still unclear whether the terms refer to lineages, polities, or specific rulers.

Only one report of non-Tamil coin finds in Tamilakam has been published. From the site of Kanchipuram, Satavahana coins with Brahmi legends were found during an excavation, along with a coin mold with a Ujjain symbol (IAR 1970-71: 32-33). These finds helped to secure a date for the strata from which the coins emerged.

Tamil-Brahmi Inscriptions and Epigraphs

The inscriptional data from Tamilakam comes in the form of Tamil-Brahmi inscription on pottery and cave wall inscriptions. Eighty to ninety rock inscriptions have been discovered in natural caverns, in addition to the fragmentary epigraphs on potsherds from 25 sites in Tamilakam (Zvelebil 1992: 123). The inscriptions range from third or second century BC to second or third century AD and are written in the Brahmi script, the only form of writing in peninsular India from the second to the ninth centuries AD (Kennedy 1976: 6). They are located mostly in the Pandya territory of Tamilakam; it is

thought that the Buddhist and Jaina monks brought the script to Tamilakam where it was modified to suit the needs of the Tamil language (Zvelebil 1992: 124). The pottery inscriptions are largely fragmentary and seem to record names and professions.

Interpreting Early Historic Material Culture

It could be argued that it is somewhat misleading and counterproductive to consider Early Historic material finds without reference to the remains associated with Iron Age burials. It is very likely, as Allchin has suggested, that the evidence from the southern states indicates that the Iron Age consisted of several sequential phases of the Iron Age, the very last of which coincided with the occurrence of Russet Coated Painted Ware, the burgeoning overseas trade (to be discussed in detail later in this chapter and in Chapter 4), the development of writing, and the general flowering of the Sangam period—in other words, what is being termed the Early Historic phase (Allchin 1982: 330). Although a central theme of this study is to integrate the widely disparate strands of research associated with early Tamilakam, it is more expedient at this early stage, to examine the material evidence commonly associated with each "period" separately.

Variability and Patterning among Early Historic Sites

As with the megaliths of Tamilakam, sites classified as Early Historic, or as having an Early Historic component, also vary within this broad classification, and it would be helpful to isolate some of these variations in an effort to discern patterns. Some studies have been done for other types of sites in Tamilakam.

The distribution of sites is one source of possible variability. The Tamil-Brahmi cave inscriptions, for instance, which offer clues about the settlements of Jain and

Buddhist monks and about merchant travel routes, are all located around the modern town of Madurai, supposedly the main capital of the Pandyan polity. Similarly, the concentration of Roman coin finds along the Malabar Coast and in and around the Coimbatore region of Tamil Nadu has been cited as evidence for the movement of goods as part of the overseas trade in gems and spices (Turner 1989: 5).

The Early Historic sites vary in terms of the geographical features with which they are associated. The broadest and most common distinction is between those sites that are coastal and those found further inland. Not surprisingly, all the coastal sites occur near the deltaic regions of a river. Most of the sites are found near the northern banks of their respective rivers, and are usually several kilometers inland from the actual shore, attributable in part to the changes in the coast line over the centuries (Spate and Learmonth: 673). All the Early Historic coastal sites for Tamilakam occur along the east coast, but this is more likely a result of uneven research in the Tamil region, rather than any real difference in past settlement patterns.[9] The coastal settlements along the eastern coast are, from north to south, Vasavasamudram, Arikamedu, Karaikadu, Kaveripattinam, Alagankulam, and Korkai (Figure 3-5). Cranganore, the only site excavated on the southwestern Malabar coast, had no occupation that could be dated before the fourteenth century AD (Achan 1946). The inland settlements include Karur, Kodumanal, Uraiyur, Tirukkumpuliyur, Alagarai, Kanchipuram, Sengamedu, and Perur. It is thought that the coastal sites functioned principally as trade entrepots and perhaps had a secondary function as alternate capitals for the Tamil rulers.

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[9] For example, no systematic surveys have been conducted along the southwestern Malabar coast, which historical texts indicate was the venue of extensive Early Historic trade activities.

Another distinction sometimes made in the literature is to assume that sites that are grouped along a single river valley form distinct subregional units. The settlement data suggest that most Early Historic sites cluster in groups along one of the four major river valleys—the Palar, the Ponnaiyar, the Kaveri, and the Vaigai (Figure 3-3). Smaller rivers like the Vellar and Chittar may also form part of this pattern. Finding a pattern in clustering for this group of sites is extremely difficult given the comparatively few sites in Tamilakam and the apparent lack of similar sites along the rivers valleys of the western Malabar Coast. The picture is of unequal distribution—a result of inconsistent research, uneven preservation, and intense population encroachment.

Although data on site size is far from complete, the available archaeological evidence suggests that Early Historic sites varied in size. Among the coastal sites, for example, Vasavasamudram is described as being about 50 square meters. The site of Arikamedu stretches 480 meters north to south, and Karaikadu is described as being similar in size to Arikamedu. The Kaveripattinam site cluster extends over an 8-kilometer stretch, with evidence for structures in the water beyond the coast, and Alagankulam is described as about one kilometer in diameter. However, better data on site size and spatial distribution is required before any reasonable inferences can be formed.

The Early Historic sites also vary in the terms of architectural features, although the architecture associated with the Tamilakam sites are neither elaborate nor varied. Permanent structures are found at a 14 sites. In the settlements, features include floors, postholes, ring wells, brick walls indicating larger structures, stone walls, small brick-lined enclosures (variously described as pits, troughs, tanks, or pits, often with drains),

and brick pavements with drains. Other important features are the wharf, inlet sluice, and a Buddhist monastic complex at Kaveripattinam.

Despite the fact that a particular collection of artifacts identified as "Early Historic" characterizes all these sites, assemblage composition from each site also varies to some degree. Again, published reports often tend to list artifact categories and rarely report quantities or other characteristics. Finished beads and evidence of bead manufacture are found in Tamilakam. Bead materials include semiprecious stones (etched carnelian, quartz, agate, soapstone, chalcedony, jasper), terracotta, shell, glass, coral, aquamarine, crystal, and paste. Terracotta sculptures are occasionally reported, mostly in the form of human and animal figurines, including one of a woman with child on hip, another of a human torso, and one of a dog (IAR 76-77: 46-47). Glass beads and glass bangles are common at Tamil sites, and evidence of glass manufacture is reported at Karaikadu (IAR 66-67: 21). Shell beads are the most common shell item reported in Tamilakam, and other items include shell bangles and hairpins. Conch and cowrie shells are reported from Alagankulam (IAR 90-91: 68), and there is evidence of a conch shell cutting industry at Arikamedu (Begley 1996: 393, IAR 90-91: 57-58). Various miscellaneous items are reported as well, including a votive lamp, spindle whorl, gamesmen, dice, crystal and gold ornaments, circular and triangular terracotta disks, ear ornaments, clay pipes, terracotta lamps, and stone perforated weights. Bone objects, such as arrowheads, points, and combs, are occasionally found. Terracotta ovens are reported from Paiyampalli (IAR 64-65: 22-23), as are furnace-like features from Arikamedu (IAR 90-91: 57-58) and horseshoe-shaped ovens from Kunnattur (IAR 1956-57: 31-34).

Archaeological evidence for craft and industrial activity is one element that can be attested to with a fair degree of certainty. The material culture of Tamilakam indicates the presence of industries such as pottery making, iron smelting, shell working, bead making and glass manufacture. The organization of these industries is less clear, though the evidence seems to suggest that most of these objects were manufactured locally. Small-scale workshops were unearthed at Arikamedu containing debris from the manufacture of metal, glass, and the working of semi-precious stone, shell, and ivory (Begley 1996: 20). Unfinished beads in various stages of manufacture were found at Karaikadu, as were glass slag, pipes (described only as "terracotta" pipes), and crucibles, indicating the presence of a glass making industry; there was also evidence of a conch shell cutting industry (IAR 1966: 21, Raman 1992: 131). Spindle whorls from Karaikadu, Uraiyur, and Adiyamankotai, suggests that weaving was an Early Historic industry. Iron slag from Alagankulam, Paiyampalli, Appakallu, and Gutturmalai (where there were also terracotta pipes encrusted with iron) attests to local iron manufacture. Rajan reported a number of different industries at various parts of the site of Kodumanal, including steel making, iron smelting, gemstone and weaving (Rajan 1994). Other activities are indirectly attested to: small brick-lined enclosures at Arikamedu and Uraiyur have been interpreted as possible textile dyeing apparatus (Begley 1996: 18-19, Raman 1988: 22-23). The ovens and furnace-like features from Vasavasamudram, Arikamedu, and Kunnattur also indicate some unspecified industrial activity.

The Evidence for Overseas Trade

It could be argued that the overseas trade in which Tamilakam engaged during the turn of the Christian era is, archaeologically, the best-documented phenomenon in Tamil

history. The material data includes find of Roman coins and coin hoards in South India, and finds are particularly dense in the area of present-day Coimbatore. In fact, the Roman coin distribution in this greater region describes an arc from the west coast of Kerala all the way to Karur in Coimbatore. It has been argued that the concentration in this region is a result of two factors: the proximity of beryl mines, and the nearby location of the Palghat Gap, through which passage from the west coast into the Tamil uplands was possible (Turner 1989: 5).

The distribution of coin finds probably tells us less about the foreign traders than about the value and function of the coins once they reached Indian soil. The density of coin distributions in South India, for example, is not matched by densities in either north India or Sri Lanka. Thapar (1992) has contrasted the Roman finds from Tamilakam with those of the Deccan and north India. Compared to the Deccan, there are strikingly few Roman artifacts in Tamilakam, yet there are overwhelmingly more Roman coins, especially in the form of hoards. It has been suggested that this difference reflects the fact that the Deccan people were melting their foreign coinage, but Thapar argues that the dissimilarity points to a different dialogue underlying the trade in Tamilakam (Thapar 1992: 12).

Interpretative Frameworks for Tamil Archaeological Data

Despite the number of sites and artifacts recovered from surveys and excavations in Kerala and Tamil Nadu, it is clear that what is lacking are models that synthesize the data in order to develop more comprehensive, clear-cut interpretations of the Tamil past.

South Indian archaeologists must begin to propose interpretive frameworks within which to analyze the material culture, to prevent archaeological studies in South India from being limited to descriptive list making. Two frameworks for interpretation will be considered here: 1) an approach that focuses on the multiplicity of communities that must have co-existed and interacted in early Tamilakam, and 2) the application of socio-economic models drawn from literature on medieval South India.

South Indian historians are now beginning to acknowledge that numerous social groups co-existed during the Early Historic period, and a similar archaeological framework is necessary in order to evaluate Early Historic material culture. Despite the literary evidence for the existence of three major Tamilakam polities that controlled what comprises now the states of Kerala and Tamil Nadu (Pillai 1984, Subramaniam 1966), the extent and nature of central administrative power over other local factions is not well understood. Tribal groups, hill communities, and hunter-gatherers very likely co-existed with other Iron Age and Early Historic populations, but little is known about how these groups were incorporated into the regional political systems of South India. Medieval inscriptional sources indicate that royal domains extended into the forest areas, where such communities dwelt, and that they were annexed by being drafted in the military and being conferred official rank (Murty 1989: 69). Contemporary anthropological research into hunter-gatherer groups in the Nilgiri Mountains and Sri Lanka demonstrate an interdependent relationship between hill groups and the agro-pastoral and urban communities (Zagarell 1995, Fox 1969). Fox describes a long-standing economic interaction between the Vedda hill tribes of Sri Lanka and neighboring agriculturalists; he even refers to a fourth-century AD Theban traveler who

obtained pepper from the Veddas (Fox 1969: 151). Gardner, discussing the Paliyans of South India, also describes an "intermittent, tangential contact with outsiders for reasons that are chiefly economic" (Gardner 1972: 407). Using both contemporary ethnographic and archaeological evidence, Zagarell argues that the peoples of the Nilgiri Mountains have alternated between periods of centralized state rule and periods of egalitarian, symbiotic relationships amongst themselves. Local histories, inscriptions, and painted rock shelters in this mountain region chronicle a hierarchical system incorporating tax collection, organized warfare, and long-distance trade (Zagarell 1995: 92-3). All these examples argue for a more fine-tuned and multi-faceted approach archaeological reconstructions of early Tamil society.

The second interpretive framework draws on two ideas that have developed out of the examination of medieval and contemporary social systems: 1) the segmentary partitioning of political power, and 2) the organization of medieval trading systems. The segmentary character of the earlier medieval Chola empire has already been discussed in Chapter 2. As mentioned, the key administrative unit at the supra-village level was the *nadu*, and each nadu had its own *nagaram* or marketing center (Hall and Spencer 1980). Medieval political and trading structures may provide analogs for similar activities during the Early Historic period. Ludden (1985) identified three levels of trading activity over the course of South Indian history: local (village to village, and village to town), regional (between ecological zones—plains, hills, seacoast, etc.), and long-distance (Ludden 1985: 130-1). Because of their divorce from land-based agrarian production, their connections with a wider market, and their general mobility, trading and artisans were relegated to marginal status in the *nadu* system (Stein 1980: 251). Besides the *nagaram* as a

marketing center, other "higher marketing centers" came to be distinguished as being more prestigious and dynamic—the '*erivirapattinam*," for instance, was thought to be a fortified mart, a merchant settlement protected by militia (Abraham 1988: 56). A marketing hierarchy involving villages, *nadus*, *nagarams*, *evirapattinams*, and coastal ports has also been posited for the medieval period of South Indian history (Hall and Spencer 1980). An analysis of the settlement patterning of these political and economic units has been undertaken (Champakalakshmi 1989), as has an evaluation of the demise of medieval trade organizations (Stein 1980). Other evaluations of socio-economic organization locate the South Indian Hindu temple at the core of redistributive model for economic, social, and ritual relationships (Appadurai and Breckenridge 1976). This interpretive framework offers yet another model of sociopolitical and economic relationships that may have archaeological correlates during the Early Historic period.

Relating these and other possible interpretative frameworks to the material culture of Tamilakam seems a daunting task, given the problems inherent in most archaeological studies from Kerala and Tamil Nadu. But one source still remains for Tamilakam, and its appropriate utilitization may provide Tamil archaeologists with the most effective means of translating the static material record from Kerala and Tamil Nadu into an evaluation of past Tamil social dynamics. I refer, of course, to the historical record of Tamilakam, which will be considered in the next chapter.

CHAPTER 4

THE HISTORICAL RECORD FOR TAMILAKAM

Introduction

The documentary record for Tamilakam has contributed substantially to reconstructions of social, political, and economic organization in Tamilakam during its Early Historical period. Because of the lack of interpretive models for the archaeological data, historians and archaeologists alike have allowed the literary sources associated with this time period to dictate interpretations of the material record, making it important therefore to evaluate the texts themselves. This chapter is divided into three sections that will explore these issues in more detail. The first section provides a brief overview of the main documentary records that pertain to early Tamil society. The second section will consider the historical corpus as a whole and describe the common principal themes that pervade the texts. The third section will discuss the theoretical and methodological issues surrounding the integration of written and archaeological data.

Survey of Historical Sources for Tamilakam

The historical evidence for Tamilakam comprises the following materials: the Sangam texts; the Tamil-Brahmi inscriptions; non-Tamil South Asian texts and epigraphs; and Graeco-Roman texts.

Sangam Texts

The most important body of texts for Tamilakam is a collection of early Tamil poems known collectively as the Sangam anthology. "Sangam" is a Sanskrit word that means an 'association', and the Tamil Sangam was a body of Tamil scholars or poets—a sort of literary academy—established by the Pandyan kings and based in Madurai, on the banks of the Vaigai (Subramaniam 1966: 3). The works that have survived comprise eight anthologies and ten idylls, one work on grammar, and 18 minor works. There are altogether 2,381 poems by 473 poets and 102 poems by anonymous authors (Hart 1975: 7). Appreciating the Sangam corpus as a source of historical data requires understanding their poetic and bardic nature: since the poetry functioned mainly as an outlet to glorify the exploits of rulers, warriors, and patrons, the information contained within them about socio-political life and organization is somewhat secondary (Champakalakshmi 1996: 175). This fact, however, has not prevented historians and archaeologists alike from using the information contained in the texts as unsystematic referents for the archaeological record.

The chronology of the Sangam works is a source of intense debate among Tamil historians (Champakalakshmi 1995: 176). Zvelebil argues that the Sangam poetry represents "a stratified corpus of texts based originally on semi-orality and developing in successive layers of organization extending over some three or four centuries into a highly literate court-poetry," and hence dates the corpus to between 100 BC and 250 to 300 AD (Zvelebil 1992: 128). Other scholars generally date them to the first, second, and third centuries AD (Hart 1975: 9), but offer an upper limit as late as the fifth to sixth centuries AD (Ray 1995: 78). Dates for the Sangam texts are based mostly on corollary

information: paleographic analyses of the earliest Tamil inscriptions, for instance, offer a fairly reliable form of corroborative evidence for dating the texts. Also, since the classical Tamil poems speak of western trade as a facet of contemporary cultural life, powerful support for the dates of the earliest Tamil texts is provided by the Greek and Roman textual and archaeological data (Zvelebil 1992: 117). Scholars generally agree that the texts are not exactly contemporaneous with the Early Historic period; to consider the Sangam corpus as a single entity is therefore a misrepresentation—as many as three or four centuries likely passed between the creation of the poems and their assemblage into anthologies (Champakalakshmi 1996: 36, Gurukkal 1995: 240-41).

One of the ancient anthologies that offers some internal chronological information is the *Patirrappattu*, or Ten Decades, a chronicle of the ancient Chera kings of Kerala. Each decade praises one Chera king and describes his lineage, exploits, and the duration of his reign (Zvelebil 1992: 107). Names provided in the chronicle have been linked with dates in the Sri Lankan *Mahavamsa* chronicle for the late second-century AD ruler Gajabahu, permitting scholars to assign the Chera kingly lineage to the three to four centuries surrounding the turn of the Christian era (Zvelebil 1992: 108).

Tamil-Brahmi Inscriptions

As mentioned in Chapter 3, 80 to 90 rock inscriptions have been discovered in natural caverns, in addition to the fragmentary epigraphs on potsherds from 25 sites in Tamilakam (Zvelebil 1992: 123). The Tamil inscriptional data differs from the Sangam texts, since they have a different source and were recorded for difference purposes. They

recount gifts and donations to Buddhist and Jain ascetics by merchants, monks, and kings. The merchants mentioned include those selling gold, textiles, salt, and toddy, and a goldsmith (Gurukkal 1989: 160). The purpose of these inscriptions seems to be to remind travelers of the bounty of various merchants and kings and their support for these sects (Kennedy 1976: 6). The Tamil-Brahmi cave inscriptions contain personal and occupational names of donors who endowed the Buddhist and Jaina monks with stone beds in caverns (Gurukkal 1989: 160) and confirm certain king and place names that are mentioned in the earliest Tamil texts (Zvelebil 1992: 124).

Non-Tamil South Asian Sources

Non-Tamil South Asian sources about early Tamilakam are scanty; the few references generally concern the main Tamil polities or trade goods. Early Sanskrit texts occasionally mention the Tamil kingdoms—the term "*Dakshinapatha,*" for example, was used to refer to the 'south'. In the *Ramayana* of Valmiki, Sugriva described to his simian regiments "the Kavata of the Pandyas famous for pearls and gems". In the *Mahabharata* of Vyasa, there is a reference to a "Sagaradvaja Pandya." The second-century BC grammarian Katyayana mentions the extreme south and refers to the names of Pandya, Chola, and Kerala. In his work *Arthasatra*, Kautilya refers explicitly to the town of Madurai and a special variety of pearls "Pandya Kavata," and he praises the economic products of the south. The inscriptions of the North Indian Mauryan emperor Asoka, dated to third century BC, refer to five independent states that presumably existed beyond the southern border of his empire: the Choda (Chola), Pandya, Satiyaputra, Keralaputras

(Chera), and Tamraparni (Sri Lanka). As mentioned earlier, the Sri Lankan *Mahavamsa* chronicles offer one of the pivotal dating references for the Tamil Sangam texts—the correspondence of the second century BC Sri Lankan ruler Gajabahu with a Chera ruler mentioned in the Sangam texts (Zvelebil 1992: 110).

Non-Tamil epigraphic evidence is another source of information about Tamilakam. The second-century BC Hathigumpha inscription from the state of Orissa narrates the achievements of Kalinga ruler Kharavela[10]; included in the description of his exploits is the destruction of a "confederacy" of Tamil powers that was apparently formed 113 years before the inscription (Zvelebil 1992: 103). The confederacy may have been formed in the third century BC to protect Tamil territory against the incursions of the Nanda king Mahapadma (Kant 2000 (orig 1971): 39). Kharavela is thought to have ruled Kalinga in the first half of the second century BC, which means that the Tamil confederacy may have been founded around 288 BC, during the reign of the Mauryan king Bindusara.

Graeco-Roman Sources

After the Sangam anthologies, it is probably the Graeco-Roman writings that provide the most detailed historical information about Tamilakam. India is in fact fairly frequently mentioned in the western classical literature (McCrindle 1971 [orig. 1901]: xxi), and most of the texts refer to overseas trade centers and ports in peninsular India.

[10] The reference reads "...he seizes horses, elephants, jewels, and rubies from king of the Pandyas, and fetches many pearls, gems and jewels worth hundreds and thousands, and subjugates...Pandya..." (Kant 2000 [orig 1971]: 30).

Of all the historical sources available for Tamilakam, the Graeco-Roman references to South India are particularly useful since they are to a large degree datable and help South Indian archaeologists fix the centuries during which overseas trade flourished.

The western texts are varied and numerous. Among the earliest to mention Tamilakam was Megasthenes, who left a fourth-century BC account of India in which he makes certain remarks about the Pandyas, including a story of the Pandyan kingdom "ruled over by Pandaiya a daughter of Herakles to whom he assigned that portion of India which lies southward and extends to the sea". The writings of the Roman Strabo describe the Pandyan embassies to Augustus, as well as the political and commercial relations between Tamil kingdoms and Roman Empire during the reign of Augustus (31 BC to 14 AD). The Red Sea route to India was becoming increasingly popular among Roman merchants, and Strabo's writing suggest a growing awareness of India among members of Roman society (Subramanian 1966: 19). In the second century AD, Ptolemy demonstrated knowledge of South India in his *Map of the World*. Pliny the Elder derived his information from earlier sources when he wrote his *Natural History* (circa AD 77); he makes mentions of many Tamil ports on the west coast, including the Malabar port of Muziris, which can be reached by sailors using the monsoon winds in forty days. He also cites specific inland and coastal towns and refers to the Chera and Pandya rulers (McCrindle 1971[orig. 1901]: 111-12). The Peutinger Tables were a series of maps composed in AD 222, which include a stretch of the southwestern coast of India. Included in this map is a notation of the port town Muziris and a nearby temple of Augustus. Cosma Indicopleustes records a Chinese embassy to the Tamil town of Kanchi (Kanchipuram) in second century BC. In his *Christian Topography*, he describes

'pepper' country and the ports and marts of South India (McCrindle 1971 [orig. 1901]: 161).

But perhaps the most useful Graeco-Roman references to Tamilakam are from the *Periplus Maris Erythraie,* a first-century AD mariner's handbook, and the Vindob Papyrus, a mid-second century AD document dealing with the shipment of goods from India. As one of the first records of organized trading with South India (Casson 1989: x), the *Periplus Maris Erythraie* is a guide for merchants dealing with the maritime trade with Africa, Arabia, and India. Because Roman Egypt's trade with India was so important, almost half the text is devoted to Indian ports of trade and trade goods. The writer makes clear that India's west coast in particular was a valued trade venue and a description is provided of three trading stations along the southwestern Malabar Coast (Casson 1989: 23). The Vindob Papyrus contains information about a loan agreement for goods imported from the port of Muziris (Casson 1986: 73). Casson speculates that the contract was between two merchants, one who had made the sea voyage to India, and other who may have been a resident of Muziris (Casson 1986: 76).

Principal Themes Derived from the Documentary Record

A review of the major historical and literary evaluations of the documentary record reveals several themes that are relevant for the South Indian archaeologist. They include the identification of sites and people; depictions of physiographic divisions of the landscape associated with certain forms of human adaptation and lifestyle; the pervasive concern with kingship and warfare; internal trade and exchange systems; overseas trade;

settlement patterns, craft and industry, religion and ideological themes; mortuary practices; and the decline of Sangam society. Each theme will be considered in turn.

Identification of Sites and Political Dynasties

Two of the most typical types of data extracted from the Tamil documentary record have to do with the identification of place names and kingly lineages. From the Sangam texts, for example, historians have found the names of 26 Chera kings and have attempted to situate these kings within a specific chronological framework (e.g. Nair 1986: 115-16). By listing the names of the Tamil kingdoms that existed beyond the southern borders of the Mauryan Empire, the Asokan edicts offer a clear identification of the main Tamil polities. There were three ruling lineages in Tamilakam, the Chera, Chola, and Pandya, each with their own coastal towns and interior headquarters. Gurukkal describes these groups as well-established lineages without clan ties who "command[ed] the resources of numerous settlements within a macroregion through predatory control and subjugation…their resource potential was enormously high, the range of domination extensive and redistributive social relationships elaborate and complex." (Gurukkal 1987: 26-27). The capitals of the ruling Chera, Chola, and Pandya were at Vanci, Uraiyur, and Madurai, respectively. Each ruler or king had his own special emblem, festival, and flower (Hart 1975: 14). The emblem of the Chera were the cut leaves of the palmyra, the emblem of the Chola was the *atti* flower, and for the Pandya it was the margosa (Hart 1975: 18). The kings possessed several important items symbolizing their authority, including a staff, a royal drum, a tutelary tree, and a royal

umbrella. There were also numerous smaller rulers, most of whom paid tribute to one of the three main rulers.

The Roman texts also contribute to the identification of towns and ports in South India, particularly those along Kerala's west coast. The *Periplus Maris Erythraie*, for example, lists the markets of "Limyrike" (that is, Tamilakam) (Casson 1995: 213)—Naura, Tyndis, Muziris, Nelcynda—and the Chera and Pandya polities, as well as information on goods, port settlements and trade activities. The description of the Malabar Coast is worth repeating here:

> "Tyndis, a well-known village on the coast, is in the kingdom of Kepropotos. Muziriz, in the same kingdom, owes its prosperity to the shipping from Ariake that comes there as well as to Greek shipping. It lies on a river 500 stades from Tyndis by river and sea, and from [the river mouth] to it is 20 stades. Nelkynda is just about 500 stades from Muziris, likewise by river and sea, but it is in another kingdom, Pandion's. It too lies on a river, about 120 stades from the sea...Another settlement lies at the very mouth of the river, Bakare, to which vessel drop downriver from Nelkynda for the outbound voyage; they anchor in the open roads to take their cargoes because the river has sandbanks and channels that are shoal. The king themselves of both ports of trade live in the interior...Ships in these ports of trade carry full loads because of the volume and quantity of pepper and malabathron. They offer a market for: mainly a great amount of money; peridot; clothing with no adornment, in limited quantity; multicolored textiles; sulphide of antimony; coral; raw glass; copper; tin; lead; wine, in limited quantity...; realgar; orpiment; grain in sufficient amount for those involved with shipping...There is exported pepper, grown for the most part in only one place connected with these ports of trade, that called Kottanarike. They also export: good supplies of fine-quality pearls, ivory, Chinese cloth; Gangetic nard; malabathron;, brought here from the interior; all kinds of transparent gems; diamonds, sapphires; tortoise shell..." (Casson 1989: 85)

Geography and Sociopolitical Organization

Another of the principal themes derived from the documentary evidence on early South India is a poetic motif known as the *aintinai*, a five-fold physiographic division of

the Tamil landscape, around which some historical reconstructions of Tamil society have been structured. The five divisions are the *kurinci* (hilly backwoods), *palai* (parched zone), *mullai* (pastoral tract), *marutam* (wet land), and *neital* (littoral). Each *tinai* is associated with a corresponding mode of human adaptation: associated with the *kurinci* (hilly backwoods) was a hunting and gathering lifestyle; with the *palai* (parched zone) was plundering and cattle lifting; the *mullai* (pastoral tract) was associated with animal husbandry and shifting agriculture; with the *marutam* (wet land) it was wetland agriculture; and with the *neital* (littoral) it was fishing and salt manufacture (Gurukkal 1995: 243). It is now understood that the *tinai* divisions represent micro-ecozones that were interspersed and scattered in an overlapping fashion throughout the landscape[11].

The *tinai* concept presents information about various socioeconomic settings in early Tamilakam, and attempts by historians to understand basic forms and processes of production and economic organization within the various eco-zones are of great utility to archaeologists. Not surprisingly, interpretations of *tinai* concept and other aspects of Tamil social organization vary a fair amount depending on the analyst. Champakalakshmi (1996: 177), for example, describes two broad phases of development, the first from a primitive to a more advanced stage of farming, and the second marking the incipient stages of urbanism which were spurred on by maritime trade activities. Gurukkal describes the people of the various *tinai* as being organized into clan-based descent groups that were dispersed into domestic segments around the clan settlement

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[11] In addition to the tinai concept, there is another broad physiographic division of the Tamil region that is thought by historians to be an indicator of the nature of contemporary agricultural practices (Gurukkal 1995: 244). This is the division into vanpulam (non-agrarian tracts), which included all hill slopes, plains, and pastures, and menpulam (agrarian wet land), which described the regions of paddy cultivation. It is now generally agreed that the extent of wetland agriculture was restricted to small pockets that were surrounded by vast tracts of non-agrarian land, and that people relied largely on dry land agriculture and animal husbandry.

(Gurukkal 1983: 24). Each clan had a headman who organized the redistribution of resources among the domestic units. An exception to kin-based labor were certain industries that were full time, and sometimes attached to a larger clans or chieftains, such as pottery making, metal working, and warriors. Other full-time jobs associated with the large clans included bards and drummers (Gurukkal 1983: 25-26). Hart includes descriptions of other groups associated with different occupations, including hill people, hunters, a ruling class, cowherds, fishermen, salt merchants, blacksmiths, potters, and chariot drivers (Hart 1975: 126). Membership in these groups was apparently hereditary, as exemplified by poems describing sons or daughters of groups following their fathers' occupations (Hart 1975: 127). Cross-cousin marriage appears to have been the norm, and the picture that Hart describes is a social system consisting of many endogamous groups, ranging from ruling classes to lowborn groups (Hart 1975: 129).

The earliest ruling families or "kings" are thought to have emerged in the *marutam* (wetland) *tinai*, which were the most fertile agricultural tracts of the major river valleys in Tamilakam (Champakalakshmi 1996: 26). The earliest towns developed in the *marutam tinai* and in the *neital* (coastal/littoral) *tinai*, and both *tinais* were dominated by the three ruling lineages—Chera, Chola, and Pandya: the *marutam tinai* with an inland capital and the *neital tinai* with a coastal capital, representing in effect twin capitals (Champakalakshmi 1996: 27). Gurukkal has argued that in the coastal ports and inland ruling headquarters, hereditary craftsmen and specialized functionaries drawn from the hinterlands worked and perhaps organized themselves into corporate bodies known as *nikamam* (Gurukkal 1983: 27), although it is not clear who controlled these industries.

In his attempt to understand the levels of orality and literacy, Zvelebil has envisaged a land with multiple hierarchical levels. At the bottom rung were vast tracts of tribal groups that were isolated in mountain backwoods and had no contact with the mainstream Buddhist/Jaina/Hindu society of the agricultural tracts and towns (Zvelebil 1992: 28-29). Above the tribal groups were a level of poor peasants, fishermen, palm-climbers, salt makers, whose lives were basically a level of folk-life—illiterate, but with more regular contact with higher groups. The next level was the land-owning communities and the rich merchants and traders, who may have been partly literate. Finally there were the elite strata—the rulers, their minstrels and bards, the members of the priesthood, administrative peoples, and warriors (Zvelebil 1992: 28-29).

The question of caste has been of some concern to interpreters of early Tamil history. Dozens of social groups are mentioned in the Sangam literature that have sometimes been equated to caste divisions. Others assume these are geographically based distinctions, or those based on tribal affiliation or occupation (Maloney 1969: 224-25). There are several references in the Sangam poems to lowborn persons, but whether this refers to caste as commonly understood is unclear, and the restrictions associated with being low born are vague (Hart 1975: 124).

Kingship and Warfare

Given the bardic nature of many of the Tamil texts, it is not surprising that the theme of royal warfare is present in numerous forms. Kennedy argues that the Sangam "king" was in fact a semi-tribal chieftain whose main concerns were battle and plunder

(Kennedy 1986-87: 7). Continuous warfare seems to have been the norm, and the most celebrated aspect of a chief was his ability to fight, defeat his enemies, and plunder territories, often in the form of cattle raids (Narayanan 1988: 21). The courage of the warrior is often celebrated, and there are descriptions of rituals associated with the erection and worship of hero stones (Narayanan 1988: 22).

These major chieftains or "kings" achieved much of their glory and reputation from battle and from the plunder they amassed. But it also seems that the chief was expected to give away much of his plunder, in a form of economic redistribution that helped solidify his position (Kennedy 1986-87: 2-3). Legitimization of the ruler came from the poems and songs that described his bravery and generosity (Kennedy 1986-87: 3), and his wealth was based on his plundered acquisitions and on merchant relations, but not on the acquisition of land. The ruler therefore never had opportunity to control a large territory, and this may have precluded the development of region-wide centralized power. According to Kennedy, the Tamil ruler's realm comprised the Sangam town, which served as a distribution center and fortification, but it was doubtful that he controlled much outside the town limits (Kennedy 1986-87: 4). Based on the texts alone, it would appear that plunder-based redistribution of resources played a huge role in the early Tamil economy (Gurukkal 1987: 51).

Internal Trade and Exchange

Internal exchange patterns are only indirectly referred to in various parts of the Sangam anthology, and often based on links among *aintinai* zonal divisions. The *kurinci*

(hilly) *tinai* were especially rich in the resources that were exported outside the Tamil region, and Champakalakshmi describes a symbiotic relationship between the *kurinci* dwellers and the dwellers of the *marutam* and *neital* zones (Champakalakshmi 1996: 27). The *kurinci* people exchanged their resources for rice and salt; the hill resources could also be obtained through warfare. The Sangam texts contrast sites that served as organized points of exchange (*avanam* or *angadi*) and coastal towns (*pattanam*) that served as centers of long-distance trade (Gurukkal 1987: 49-50). Gurukkal describes reciprocity as the main form of exchange in early Tamilakam, with rice and salt as the leading items of exchange, and weights of gold as the media of exchange in the coastal towns (Gurukkal 1987: 49-50).

Internal exchange networks is also implied by the *Periplus Maris Erythraie*, which describes the transfer of goods at Tamil ports that originated in other parts of South Asia. From the Malabar ports of Muziris and Nelcynda, Gangetic nard is listed as an export item (Casson 1989: 23), as is malabathron (a variety of cinnamon leaf that grows in northeastern India), which is described as "being brought here from the interior" (Casson 1989: 85). The economic processes that structured the transport of goods from such a distance is not well understood, but still a critical issue that must be addressed to appreciate the complex organization in Tamilakam.

Overseas Trade

The best accounts of the overseas trade come not from the Sangam texts, but from the Graeco-Roman writings. In addition to their usefulness for dating purposes, the Graeco-Roman texts have been a valuable resource for information on Indo-Roman

trading networks, and especially on the port, markets, and items of exchange in Tamilakam. Predictably, the external sources deal mostly with logistical information, such as sailing conditions, distances and directions to the ports of trade, markets, descriptions of trade items, and occasional incidental references to local Tamil rulers. The Sangam texts indicate awareness of overseas trade through references to the levying of taxes on goods coming into the port (Champakalakshmi 1996: 29). The Sangam texts describe beautiful ships of the *yavanas* or foreigners, laden with gold that was exchanged for pepper, and there is also mention of the cool fragrant wine brought by the foreigners in elegant jars (Thapar 1992: 22-23). Very little, however is said, either in local or foreign writings, about how this overseas trade integrated with local exchange networks, though historians have speculated on this topic. Gurukkal argues that the Indo-Roman maritime exchange was an extension of the domestic mode of reciprocity, except with the use of gold and silver coins or bullion that operated not as currency but as valuables (Gurukkal 1983: 27-28).

Settlement Patterns

Altough they lack clear-cut descriptions about the distributions of people and settlements across the landscape, the Sangam texts to allude to the topic. The historian Champakalakshmi suggests that the most commercially active and organized towns existed principally in the *marutam* (wetland) and *neital* (coastal) tracts, which could account for the paucity of urban settlements in the Tamil interior (Champakalakshmi 1996: 28). With a concentration of resources, both agricultural and maritime on the coast and in the wetlands, it is not surprising that most of the early Tamilakam population

would be found there. This is supported, to some degree, by both historical and archaeological data. The other *tinai* were less densely populated and probably by a diversity of people: cattle raiders, itinerant agriculturalists, hunter-gatherers, even some who have made predation a way of life. This notion is also supported, to some degree, by both historical and archaeological data. There is one interesting mention of the whole of Pandyan territory as being relatively lightly settled (Gurukkal 1987: 50). The concepts of landscape archaeology and archaeological exploration would help to test these observations.

Craft and Industry

References can be found in the Sangam texts to industries like metal smelting, weaving, glass making, stone cutting, and pottery making (Gurukkal 1983: 24). Crafters such as smiths, carpenters, jewelers, and goldsmiths are also mentioned in the Sangam texts (Champakalakshmi 1996: 31). There is some suggestion about how these industries were organized. Weaving is mentioned as being done by women in the pastoral tracts and it seems to have been engaged as a domestic-based activity. This is most likely in contrast with the pottery and metal industries, which may have been full-time hereditary occupations. As mentioned earlier, cave inscriptions refer to merchants who sold gold, cloth, salt, and toddy (Gurukkal 1989: 160). Another third-century BC Tamil Brahmi inscription refers to a blacksmith (Gurukkal 1983: 25). The Sangam texts contain references to blacksmiths and potters that suggest their status as full-time craftsmen.

Religion and Ideology

The ancient Tamils appear to have had a number of gods, only a few of whom had names (Hart 1975: 22). Goddesses or celestial women are also mentioned in the Tamil texts, as are demons or ghosts. It was the king, however, who is described as the central embodiment of sacred powers (Hart 1975: 13). Before the arrival of Brahmins, no priestly class had a higher status than the king; in fact the word for king in ancient Tamil now denotes a supreme deity (Hart 1975: 13). The position of king in Tamil social structure is in direct contrast to the role of the king in North India, where sacred issues were in the hands of the Brahmins (Hart 1975: 13). Brahmins did live in Tamilakam, and in fact some of the Sangam poets were Brahmins, but it seems that they had so accommodated to life in Tamilakam that they did not much resemble their northern counterparts (Hart 1975: 51). Brahmins did introduce Vedic sacrifices and other rituals and sometimes acted as envoys and advisers. The texts suggest that Brahmins were treated with respect, lived apart in their own communities, and worshipped at Saivite temples (Hart 1975: 56). No explicit mention is made of Jainism or Buddhism in the Tamil anthologies, although it is known that both sects had penetrated into Tamilakam by that time—Tamil inscriptions predating the anthologies refer to monks and nuns of these religions (Hart 1975: 69).

Mortuary Practices

Given the number and variety of burials in South India, any information regarding religious rituals and mortuary practices from the Sangam literature would be of special interest. Tamil beliefs in the afterworld are, however, only vaguely referred to in the

texts (Hart 1975: 41). Hart does discuss an early Tamil belief in a sort of Valhalla for warriors who died in battle (Hart 1975: 41), but little more is mentioned.

Several ways of disposing the dead are mentioned. Cremation and exposure with subsequent interment in pots are clearly described in the texts (Hart 1975: 82-83). The *Manimekhalai*, one of two Sangam epics, lists more methods, including pit burial, entombment in subterranean vaults, and interment in urns (Shattan 1989: 25)—distinctions that may suggest possible differentiation in rank and status of various Tamil groups (Champakalakshmi 1996: 33). These textual references have good parallels with the South Indian megalithic features described in the previous chapter. What have so far not been identified archaeologically are the indications of large structured mortuary sites: the *Manimekhalai* describes "a vast plot of land surrounded with high walls [that] was set apart for the dead" (Shattan 1989: 24). This enclosure had four gates, each decorated differently: a flag flew over one, the second was decorated with frescoes, the third had lime-covered walls, and the fourth had a statue made of stucco and clay. Another area had brick monuments of various sizes that included the tombs of rich families, scholars, and kings (Shattan 1989: 24).

The Decline of Sangam Society

No definitive evidence is available about why and how Sangam society seems to have undergone changes—perhaps leading to a complete decline— by the end of the third century AD. Historians have traditionally associated this change with the incursion of a poorly documented entity called the Kalabhras (Gurukkal and Varrier 1999: 243,

Venkata Raman 1957). Originating in Karnataka uplands, the Kalabhras are thought to have swept into Tamil country and brought about the end of the Tamil chiefdoms.

Gurukkal suggests an alternative explanation for the eclipse of the Tamil chieftains. Based on an analysis of the Sangam texts, he associated this change with development of *brahmana* households in the *mullai tinai* zone associated with plough agriculture (Gurukkal 1983: 28). The *brahmana* household represents a totally different system of production based on extraneous non-kin labor. Textual support for this thesis comes in part from fifth to sixth centuries AD rock inscriptions that note the transaction of tracts of land to *brahmana* landowners (Gurukkal 1983: 30). The inscriptions also describe a structure very different from earlier Sangam society, where the rights and obligations of landowners, leaseholders, and tillers are more clearly laid out.

The increasing influence of the *brahmana* households and brahmanic principles in early Tamil society have been debated by scholars. Hanumanthan (1986), for example, studied the Sangam texts to search for evidence of caste untouchability and concludes that the idea of ceremonial purity and the practice of untouchability is indicated only in the chronologically later texts. These late texts mention pollution and untouchability, for instance in the context of water being polluted by one group member and becoming therefore undrinkable by a high born people (Hanumanthan 1986-87: 52). It is thought that the Brahmins, who settled in different parts of Tamilakam, converted Tamil chieftains to the Vedic religion and, in time, developed large agrarian corporations and a temple-centered *bhakti* ideology (Narayanan 1988: 24-25). Narayanan (1988) suggests that the land grants of the post-Sangam age indicate a brahmin-chieftain alliance that helped to secure the growing influence and power of the Brahmins (Narayanan 1988: 25).

Integrating Documentary Records with Archaeological Data

"Since archaeologists and historians have a common interest in the human past," says Andrew Sherratt, "their continuing capacity to ignore each other's existence is rather surprising" (Sherratt 1991: 136). A comment like this may have been valid a few years ago, but now the relationship between history and archaeology is a legitimate concern among scholars who want to integrate systematically the two disciplines in order to interpret the past. As largely separate but interdependent means of accessing the human past, the debates about the nature of this relationship are numerous and have ranged from defining the myriad roles of history within archaeological research (Patterson 1990, Hodder 1986, Binford 1972) to developing models for the archaeological analysis of literate societies (Zettler 1996, Small 1995, Begley and de Puma 1991, Bintliff 1991, Ray and Mukherjee 1990). The theoretical concerns of historical archaeology, for example serve to highlight many of the key issues in the reconciliation between the material and textual data (Little 1992, Schuyler 1978, South 1977).

Historical archaeologists, however, are not the only scholars who have wrestled with this issue; it is a key element in any archaeological attempt—in the Old World as well as the New World, and in both pre- and post-colonial contexts—to recover information and meaning about societies that have bequeathed both material and documentary records (e.g., Zettler 1996, Small 1995, Bintliff 1991, Trigger 1968). At this point it will be useful to clarify some of the debates around the attempts to reconcile history and archaeology, particularly in Old World, pre-colonial settings, and to consider some of the theoretical and methodological options set forth by archaeologists as they attempt to reconcile this issue.

History: The Perspective of Archaeological Theory

For the purpose of the research presented here, the distinction between archaeology and history is roughly equated with the distinction between material and textual records from the past. But it is worthwhile to remember that this definition is but one way of defining these two fields of inquiry. Within the larger historiography of archaeological theory, the term "history" has long held a prominent place and has been, one could suggest, an inevitable element in definitions of archaeology. The meaning of the term fluctuated within archaeological thought, depending on the underlying premises of the changing dominant paradigms of the field (Trigger 1989: 317, 373). Whether it was the edifice on which were arranged the time-space building blocks of early culture historical studies, or the straw man of new archaeology (Bamforth and Spaulding 1982), or the privileged component of many post-processual archaeologies (Dyson 1995, Leone, et al. 1987, Hodder 1986), the importance of "history" to archaeology has swung like a pendulum along a continuum of meaning.

Within American archaeology, for instance, history had been viewed as largely irrelevant to prehistoric archaeology; Trigger attributes this to a tendency to view history and archaeology as antithetical rather than complementary concepts (Trigger 1989a: 19). The concern within processual archaeology to discover explanatory principles of cross-cultural regularity implied that the search for a "proper historical framework" was of only secondary importance (Binford 1972: 121). This approach contributed to archaeology's gradual drift away from the craft of the historian: while archaeologists looked to science as an appropriate methodology, historians continued to focus on description and humanistic insight (Sherratt 1991: 137). As an example of the postprocessual

philosophy, Hodder's contextual approach, in contrast, attempted to bridge the gap by asserting that only history had the ability to get "inside" events of the past; as a means of accessing subjective meaning, particularistic history, to Hodder, played as important a role (if not more so) as cross-cultural generalizations (Hodder 1986: 77-90).

Methodological Considerations

Recognizing that history and archaeology are both media by which the past can be accessed, the most basic way of linking the two is to use one record as a means of identifying or corroborating information recovered by the other (Leone and Potter 1988). Leone and Potter argue that Binford's middle-range theory may be adapted from ethnoarchaeological studies to the documentary record, in other words, that textual evidence should be used to set up "descriptive grids" (Leone and Potter 1988: 13), based on the documentary record, against which the archaeological record can be analyzed. Essentially, the documents will provide testable questions that the material remains may be able to answer; and the answers in turn will offer insights into both the documentary and material records and their relationship (Leone and Crosby 1987: 14).

Deetz's discussion on this subject places the debate squarely within the larger issue of the role of anthropology. Building on Taylor's (1948) arguments (which Deetz refers to as "one of the most tightly and carefully reasoned discussions of how history and anthropology related to one another, and how this relation, in turn, positions archaeology in relation to both" [Deetz 1988: 13]), Deetz argues that all three disciplines are using different data sources—the ethnographic record, the material record, and the documentary record—to achieve the same goal: the writing of contexts (Deetz 1988: 18).

If anthropology (and archaeology, as one of its sub-fields) is concerned with cross-cultural regularities, and history is focused on individual events, then the relationship between the two is complementary—"Each…supports and furthers the ends of the other, even though these ends are different" (Deetz: 1988: 19).

Peter Kosso likens the relationship between texts and archaeology to the use of testimony and physical evidence in a court trial (Kosso 1995: 182): each line of evidence can be used potentially to evaluate the other. Although the two sources are seldom about the same event, peoples, or objects, they are often about related things (Kosso 1995: 183), and hence may be used in conjunction with one another to recreate the past. Kosso is careful to acknowledge the lack of complete independence between the historical and archaeological forms of evidence but proposed that, with a systematic enumeration of the distinctions, it may be possible to compare and contrast the claims of each line of evidence. To make such an approach work, it is first necessary to recognize—and somehow manage—as many of the circumstances that lead to the creation of each type of record.

A similar approach is espoused by Wylie (1985) in her critical discussion about the use of analogy in archaeology. One kind of link often established between archaeological and textual records (particularly in South Indian archaeology) is that rooted in analogical reasoning—i.e., the use of knowledge from one record to make inferences about the second record, based often on assumptions of uniformitarian principles. Although Wylie is referring to archaeological and ethnographic sources is her essay, the same debates apply to archaeological and historical sources. (In the latter case, assumptions of direct historic continuity or diffusion are used as often as

unformitarianism to legitimize the analogy.) To keep analogical reasoning relevant, Wylie urges that certain constraints be placed on the analogy (1985: 94-99): (1) the number of similarities must be weighed against the number of *differences* between the two records; (2) the correlation between *functional* as well as *morphological* attributes must be examined; (3) the similarities postulated in the premise must outweigh the similarities claimed in the conclusions.

Integrating History and Archaeology at the Theoretical Level

Other factors have influenced the incorporation of history into archaeological research, including (1) the recognition of the interrelationship among neighboring societies and the impact of these contacts on culture change and process and (2) the desire to reconcile the forces structuring long-term continuity, on one hand, and those structuring short-term changes, on the other. Two schools of thought were appropriated by archaeologists in order to deal with these issues: world-systems theory and the *Annaliste* paradigm of history. Briefly, world-systems models, originally developed by Wallerstein, make the attempt to develop an "explicitly historical account of capitalist origins and the development of the 'European world-economy'" (Wolf 1982: 22). The idea of a global market, with global divisions of labor spread out among core countries and peripheral regions, was modified and applied to pre-capitalist intersocietal interactions in antiquity, such as Bronze Age West Asia (Frank 1993, Kohl 1987).

The *Annales* model, as outlined by Braudel, presents a view of time dominated by three time scales: the short term, medium term, and long term (Bintliff 1991: 6). Equal consideration is given to both continuity and change, in whatever manner they variously

occur in each time scale (Knapp 1992: 1). For the archaeologist, it has been said that the *Annaliste* use of a "hierarchical explanatory structure" may prove useful, and, as Sherratt points out, it has a special currency in those sweeping time periods that bridge prehistory and history, whereas theorists often vacillate between paradigms of "traditional history" and "prehistory" (Sherratt 1991: 140). Early Historic South India therefore seems an ideal setting for the *Annaliste* model: the archaeologist is faced with a time period that spans the transition from proto-historic to historic South India, and determining the boundaries of these stages continues to be problematic (Mukherjee 1990: 25). Although it has its shortcomings, the *Annales* approach is better equipped than most models to integrate differing scales of time and space (Fletcher 1991); it allows for the potential integration of local, small-scale processes with broader interregional activities. Trade in South India, for example, could be viewed as a dialectic among (1) local, village-level economic interests and activities, (2) coastal and overland peninsular trade in staple goods, and (3) the large-scale, multi-regional Indian Ocean trading network in luxury goods. Here, long-term changes, such as the development of subsistence and exchange systems, may be subject to generalizing forms of explanation, while short-term processes may be best understood in terms of their particular historical context (Cobb 1991: 181).

From an anthropological perspective, archaeology's approach to history should be located somewhere in between neo-evolutionary regularities and historical particularism. The compromise involves not only an appreciation of the evidence of the cross-cultural regularities in human behavior collected over decades of research, but also an acknowledgement of the impact of individual ideologies and beliefs on culture change and the influence of particular patterns of historical processes on particular social systems

(Trigger 1989a: 33-34). "Archaeology has two unique resources: its access to the microstructures of daily life, the pattern of 'small things forgotten', and its ability to survey the grand sweep—10,000 times the length of Braudel's long duree...Archaeology's objective should be to link these two domains, neglecting neither one nor the other, in a way that goes beyond 'history' and 'evolution'..." (Sherratt 1993: 128).

History and Archaeology in Tamilakam

The discussion in the previous section offers a variety of ways in which the documentary and material records for Kerala and Tamil Nadu may be integrated and at the same time guard against some of the broad tendencies described by Feinman (1997: 371-74): the tendency to overvalue documents at the expense of archaeological data; the unsystematic and selective use of textual records by archaeologists; and the lack of attention paid to spatial and chronological scales of analysis. Although there are a number of issues that can be addressed, two will be briefly considered here—1) the identity of Tamilakam as a separate culture region and 2) the application of the *aintinai* concept—to demonstrate how historians and archaeologists can work together, on equal footing, in the effort to illuminate the Tamil past.

As mentioned earlier, the Early Historic period is also the period to which can be traced the first indications of the concept of a "Tamil" identity in South India, which in turn led to use of the term "Tamilakam" to identify the region now occupied by Kerala and Tamil Nadu. Because the term "Tamil" occurs often in the Sangam literature, historians and archaeologists alike have inferred some sense of cultural or ethnic

identity—or at least some consciousness of independence or separateness from neighbors to the north and south. Archaeologists of South India tend to label sites and objects in Kerala and Tamil Nadu as "Tamil", without considering whether signifiers exist in the material record that substantiate or refute this notion of cultural separateness. They have assumed instead that the documentary record serves as the best and most reliable source for knowledge about past identity. Yet the relationship between ancient Tamil texts and material culture is far less clear-cut. The archaeological evidence that sets Tamilakam as a region apart from the rest of South India has never been clearly identified. If cultural identity is defined as mere presence/absence of artifacts types and categories, then the definition fails here, since nearly all the material culture found in Kerala and Tamil Nadu can be found elsewhere in peninsular India. Based on linguistic evidence, the only identifiably "Tamil" remains are the cave and pottery inscriptions, yet their content and purpose differs substantially from the Sangam texts. The tendency of historians and archaeologists to assign a text-based "Tamil identity" to objects and sites found in the Tamil region may have obscured the possibility that more than one social dialogue was in progress (Jones 1997:28). It is perhaps not a coincidence in this formative stage of Tamil social history that both the Sangam texts and external references to Tamilakam concentrate on military and political endeavor. The Sangam poems are essentially heroic court poetry extolling the military prowess of various Tamil rulers as they competed for territory and the spoils of plunder, and evidence from other parts of South India suggest that at this time polities from Tamil region were battling incursions from the north. If so, then the Sangam texts may signal the efforts of petty rulers to promote a nascent self-awareness based on linguistic and historical commonalities. This would be consistent in

a context where the development and maintenance of a supposed region-wide identity was necessary in order to muster support and resources in the face of internal and external threats. Hence, one possible reason that the material culture of early Tamil South India does not obviously display markers of a regional Tamil ethnicity or identity may be that the material record reflects, not the self-consciousness regionalism of the documents, but a pattern of social and cultural processes that were primarily small-scale, self-organized, or at least not controlled to a great degree by the *soi-disant* rulers of Tamilakam. A more appropriate framework, then, for integrating the textual and archaeological data for Tamil South India is the one that argues that there are important qualitative differences in the ways that texts and artifacts construct and reflect ethnic identity, and that archaeologists and historians must situate the interpretations of their respective data sets within the larger social, political, and economic practices (Jones 1999: 229).

The second issue where the relationship between archaeology and history is critical to the Tamil past is the the *ainttinai* concept. As described in the Sangam anthologies and briefly discussed earlier, this motif presents the South Indian archaeologist with a model of regional variability that can be tested using the material and settlement data, but one that has not yet been addressed by archaeologists. South Indian historians have viewed these physiographic divisions as a reflection of ancient Tamil reality, at least in part, and have tried to generate ideas about socio-economic activities in the region. The existing physiography of the Tamil region does support its use, as does the realization that these five ecological divisions are not mechanical and rigid compartmentalizations of nature, but more probably overlapping segments that were

interspersed amongst one another, scattered across the landscape, and graded into each other. The unwillingness—or inability—of South Indian archaeologists to do the same is, to a great degree, because of the lack of attention paid to the issue of large-scale spatial variation in ancient Tamilakam. Most archaeological studies to date have focused on single sites, or a single class of artifacts, in order to make generalizations about the Tamil past. The reluctance to synthesize the entire Tamil archaeological record has made a regional analysis impossible, and yet it is this very ability to address scalar issues that sets archaeology apart as a discipline. Moreover, it offers another method by which the archaeological and documentary records for South India may be articulated. In a sense, one could argue that the lack of integration between the archaeological and documentary record so far in early South India is in part attributable to very different scales of analysis. By trying to model spatial diversity at the regional level, archaeologists will be required to integrate their various strands of material data and research and develop testable models of Tamilakam social, political, and economic organization. This, hopefully, will minimize the tendency of both archaeologists and historians to selectively adapt the evidence from the complementary discipline to support their own interpretations.

Of course, tackling text/artifact imbalances or scalar discrepancies will not completely resolve the issue of how to systematically and methodically unite the material and textual records to interpret South India's past. But these example help to illustrate how South Indian archaeologists may employ methods that situate their material culture in ways that have so far not been attempted in South India, and how future archaeological practice in the region may benefit from reconsideration.

CHAPTER 5

THE PALGHAT GAP SURVEY

Overview of the Palghat Gap

This chapter will describe the Palghat Gap Survey, a regional survey conducted over two field seasons between 1997 and 1999. The project was developed in order to supplement the body of work on late Iron Age/Early Historical South India by recording the nature and distribution of sites located in the Palghat Gap, a small area in the state of Kerala. Hitherto no systematic explorations of the Palghat Gap have been conducted to address questions of social organization and complexity, yet it is a region of great importance to South India's history, functioning as it did—and still does—as the main gateway of travel and communication between the east and west coasts of the southern peninsula.

This field project was designed so that the data from the Palghat Gap Survey would help build a body of archaeological evidence that would correlate with the historical representations of ancient overland exchange and territoriality in Tamilakam. It was expected at the outset that a portion of the sites would be megaliths, and it was hoped that evidence of habitation sites and related activity centers would also form part of the body of data. Now, faced with the recovery of numerous megalithic clusters and some settlements, as well as a large corpus of ceramics, the opportunity presents itself to examine the disposition of these sites across the landscape, to make detailed records of the two largest megalithic clusters from the Gap, and to examine the pattern of the megalithic units within each grouping and their relationship to topographical features. In

addition, the pottery collected during the survey will offer the chance to develop a preliminary ceramic typology for Kerala and to profile the Kerala ceramics in the context of the array of the ceramics already associated with the Iron Age/Early Historical period from Tamil Nadu and other parts of South India.

Strategic Importance of the Palghat Gap in Early Tamil History

As discussed in Chapter 4, historians have pointed out that in order to understand early South India, one must acknowledge the possibility of separate histories for its different subregions (Champakalakshmi 1996, Gurukkal 1995). A foremost concern of this research, therefore, is to see whether there exists a corresponding distinction in the material culture from the various subregions. The assumption made here is that integrating the data from Kerala with that of Tamil Nadu will lead to clearer archaeological characterizations of a region that, according to the historical reconstructions, is supposed to have formed a more or less culturally coherent subdivision of South Asia in the past. Data from the survey, therefore, were analyzed in the context of existing material and textual evidence from Kerala and Tamil Nadu to provide insights into social, economic, and political processes that distinguished early Tamilakam from the Deccan, the Andhra region, Sri Lanka, and other parts of South India.

The choice of the Palghat Gap for survey work was based on several considerations. This roughly 30-kilometer-wide pass is the only principal break in the Western Ghat mountain ranges that runs roughly north-south down the peninsula (Figure 5-1). As the one significant passage connecting the western Malabar Coast of the

FIGURE 5-1: Location of Palghat Gap

southern peninsula with Tamil uplands and the east coast, the Palghat Gap has since antiquity operated as an integral avenue in South India's trade network (Nair 1986). According to Wheeler (1971 [orig. 1954]: 43), the habit of preferring overland travel to circumcoastal navigation was common in the ancient world; Mediterranean documents also indicate an aversion to sailing around the southern tip of India during the early years of Roman trade with India (Wheeler 1971: 144). The critical position of the Palghat Gap is further attested by the fact that it bridges several archaeologically key regions in South India. To the east is Tamil Nadu's Coimbatore district, the location of several important sites (e.g., Rajan 1998, 1994) and a number of Roman coin and jewelry hoard finds (Devasahayam 1985), and to the west are Kerala's Thrissur and Ernakalum districts, where the major ancient port Muziris is thought to have been located. All the districts, including Palghat, contain megaliths (IAR 1960-61, 1962-63, 1979-80).

Geography of Greater Palghat Gap Region

The Palghat Gap is a broad highland plateau that forms a natural passage through the Western Ghat mountain ranges connecting the Tamil Nadu uplands with Kerala's Malabar Coast. It is located in Kerala's Palghat (or Palakkad) district between 10°20' and 11°15' north latitude and 76°02' and 76°55' east longitude, and is bounded by Tamil Nadu's Malappuram and Nilgiri districts to the north, Tamil Nadu's Coimbatore district to the east, and Kerala's Malappuram and Trichur districts to the south and west (Figure 5-2). The Palghat Gap is extremely fertile agriculturally, since it is a recipient of monsoon rains and is traversed by several rivers; it has been the venue of agriculture and pastoralism for at least five millennia. This productivity, and strategic location as a route

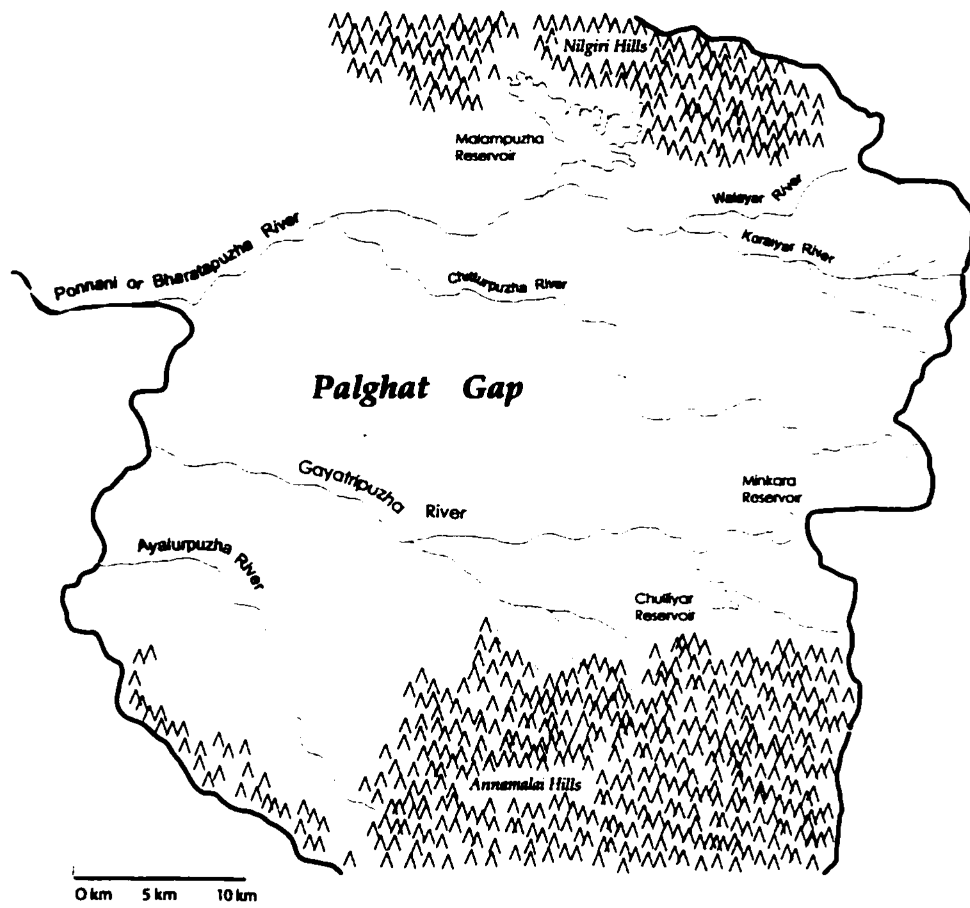


FIGURE 5-2: The Palghat Gap

across the southern part of India, helps to explain the importance of the Pass and the reason this study has been conducted.

Geomorphology, Soils, and Cultivation

The topography of the Gap is represented by flood plains, alluvial fans, residual hills, and gently undulating slopes (Center for Earth Science Studies 1984: 37). The major rock types that characterize the Palghat plateau are crystalline formations (chiefly khondalites, charnockites, and gneisses), granites, sedimentary rocks (sandstones and clays), and laterite. Peninsular gneiss is one of the most common rock types of Kerala, the minerals of which include quartz, feldspars, biotite and garnet. A notable physiographic feature of Kerala is laterite, an earthy, red-stained, pitted and porous rock that covers about 60 percent of Kerala's surface area (Gurukkal and Varrier 1999: 36). Formed as a result of the chemical weathering of rocks, laterite occurs as a cover over the crystalline and sedimentary rocks of the region (Ramachandran Nair 1986: 78.)

In the plains of Palghat district, the rock substrate is overlaid with soil matrix made up predominantly of sandy loam and clayey humus (Vajravelu 1990: 6), forming an ideal foundation for agriculture. Often referred to as the "granary of Kerala," this part of Kerala state records the maximum crop diversification in the state and dense population. The present-day fertility and settlement density of the Palghat Gap region very likely mirrors a corresponding degree of high agricultural potential during the late Iron Age/Early Historic period and is a strong argument for a presence of early human settlements in the region, compared to other less cultivable parts of early Tamilakam. Currently 64 percent of the total area under rice cultivation (Nambiar 1992: 16); other crops include pulses, coconut, tapioca, cashew, pepper, and rubber (Center for Earth

Studies 1984). In Chittur taluk, cotton and groundnut are cultivated with the aid of feeding canals (Spate and Learmonth 1967: 676). Today, the Palghat economy is primarily agricultural: 65 percent of the population works in agriculture and nearly 90 percent of the population is rural.

Water Resources

The broad, undulating plain of the Palghat Gap is traversed by four perennial, or semi-perennial, rivers. From north to south they are the Ponnani or Bharatapuzha River and its three tributaries, the Chitturpuzha, the Gayatripuzha and the Ayalurpuzha. All the rivers flow to the west from the higher elevations in the Western Ghat region of present day Tamil Nadu and are joined together in the Palghat District where the three tributaries merge with the Ponnani-Bharatapuzha River. From this point on, a historically important route to the coast of Kerala is formed by the valley of the Ponnani/Bharatapuzha River. The rivers would have functioned as an anchor for ancient settlements and as a guide for the ancient transport routes that stretch from the Coimbatore upland sites further inland to the trading entrepots along the southwestern Malabar Coast.

The Palghat Gap and Western Ghat Resources

The Western Ghat mountain ranges form a nearly unbroken relief parallel to the western coast of the Indian peninsula for almost 1600 kilometers, and its forests are one of the best representatives of non-equatorial tropical forests. The hills of the Western Ghats immediately to the north and south of the Palghat Gap range from 1,100 to 2,000 meters in elevation (Nair 1986); those to the north are known as the Nilgiris and those to

the south are collectively referred to as the Anamalai-Palani-Cardomom group. These mountains intercept the southwestern monsoon rains, creating a moist deciduous forest environment that are currently home to plantations of teak, tea, rubber, coffee, and cardamom. Other notable forest resources include black pepper, cardamom, cinnamon, ginger and Job's tear (Table 5-1). This diversity of resources indicates that the Palghat Gap would have been a natural source for items exported for overseas trade—another important reason for conducting this study. Roman trade with the ports of the Malabar Coast is supported by finds of archaeobotanical evidence from the Roman Egyptian port of Berenike, where black pepper, Job's tear, and teak have been recovered from occupation levels dating to the first centuries AD (Cappers 1999: 54-59).

TABLE 5-1

Ancient Items of Trade from the Western Ghat Mountains

Trade Item	**Scientific Name**	**Brief Description**
Teak	*Tectona grandis*	Found in the deciduous forests of the Western Ghats
Black Pepper	*Piper nigrum*	Obtained from the perennial climbing vine, *Piper nigrum* which is indigenous to the tropical forests of Western Ghats of South India. The hot and humid climate of submountanous tracts of Western Ghats and Eastern Ghats is ideal for its growth.
Cardamon	*Elettaria Cardamomum Maton*	Grown mainly in Kerala, Tamilnadu and Karnataka, on the shady slopes of the western Ghats.
Cinammon	*Cinnamomum malabaricu;, cinnamomum zeylanicum*	A moderate sized tree found in most places in Kerala bushy evergreen tree of the laurel family, the bark of which is used as a spice.
Ginger	*Zingiber officianale*	Grown in the western Ghats, and thrives best in well-drained soils like sandy or clay loam, red loam or lateritic loam.
Job's Tear	*Coix lacruma-jobi*	Found in all districts of Kerala. Cultivated by hill tribes.

Previous Archaeological Research in the Region

Archaeological fieldwork in the state of Kerala has been sporadic compared to other parts of South India. Explorations and excavations have taken place over the years, but the publishing record is poor. The major published research comes from the works such as Mehta and George (1978) and Satyamurthy (1992).

In Palghat District, there have been occasional reports of pre-Iron Age sites and artifacts, perhaps beginning with Philip's find of a Neolithic celt (Philip 1891). Rajendran recorded a number of Paleolithic sites as well (Rajendran 1975), and occasional notices have appeared intermittently in the *Indian Archaeology Review* (1960-61, 1962-63, 1979-80, 1980-81, 1981-82). Geological studies of the course of the Bharatapuzha River and the sediments exposed in the dam excavation at Kanhirapuzha and Malampuzha revealed some "stone age" tools of hornblende gneiss, veined quartz and crystalline quartz (IAR 1973-74: 18). Stone age sites are also reported at Walayar, with collections came from alluvial lateritic surface (IAR 1975-76: 22-23). Comprising microlithic tool types, they were made of vein quartz and are comparable to those found at other sites in north Kerala. An exploration of the valleys of the Bharatapuzha River led to the discovery of sites with middle Paleolithic and Mesolithic tools. A similar tool repertoire was reported at Mankara and Parli from gravel beds and alluvial terraces. A few choppers of vein quartz were found at the Kanhirapuzha dam site. Near the Malampuzha dam site, an exposed section of lateritic gravel and sand revealed quartz flakes, cores, choppers, awls, borers, simple points, and a few blades (IAR 73-74: 18).

The earliest references to Iron Age finds in the Palghat region comes from Babington's 1823 report of a *topikal* (1823: 321-20) and Sewell's 1882 list of megalithic

finds (Sewell 1882: 252-53). The most comprehensive explorations of the Palghat Gap, however, were carried out in the 1970s by George (1975) and 1980s by Vallath (1986) and Poulose (1987). Table 5-2 lists the sites found during these general explorations.

Other relevant studies take the form of survey and excavation work done in the adjacent district of Coimbatore district in Tamil Nadu (Rajan 1990, 1994). No systematic surveys from Kerala have yet been published, but graduate students from Baroda University and Deccan College have conducted explorations in Thrissur district (located to the west of and adjacent to Palghat district). The results of the Palghat Gap survey will be particularly useful when considered in conjunction with the results of research from these adjoining regions.

Table 5-2

Previous Finds of Megalith Sites in the Palghat Gap

SITE NAME	TALUK	Dolmen	Slab Cists	Stone Circles	Urn Burial w/ Capstone	REFERENCE
Kannachiparutha	Alathur	6				KM George 1975: 157.
Kornapara	Alathur	24				KM George 1975: 157-58.
Munipara	Alathur	5				KM George 1975: 158
Nannangadi	Alathur	11				KM George 1975: 158.
Pallatteri	Palghat		10	1		KM George 1975: 158-59.
Pazhambilikode	Palghat		2	19		KM George 1975: 162-63.
Palakuzhy	Alathur		8			Paulose 1990: 25-28
Koranapara (Palakuzhy)	Alathur		5			Paulose 1990: 28-29

Mukhaparutha in Kizhakkencherry Village	Alathur		8			Paulose 1990: 29-30
Anayadiamparut ha in Kizhakkencherry Village	Alathur		8			Paulose 1990: 31-32
Thonipadom in Tarur Village	Alathur		23	11	1	Paulose 1990: 32-37
Akathethara	Palghat		35	14		Vallath 1986
Edathera	Palghat		2			Vallath 1986
Kalladikod	Palghat		32			Vallath 1986
Kavalpad	Palghat		32			Vallath 1986
Kizhakkumpura m	Palghat		24			Vallath 1986
Kuthanur	Palghat		37			Vallath 1986
Kuzhalmandam	Palghat					Vallath 1986
Kodunthirapalli	Palghat		36			Vallath 1986
Kongad	Palghat		8			Vallath 1986
Thadukasseri	Palghat		32	82		Vallath 1986
Theneri	Palghat		17			Vallath 1986
Pallatteri	Palghat		1	1		Vallath 1986
Parli	Palghat		5			Vallath 1986
Pudusseri	Palghat		24	19		Vallath 1986
Manalur	Palghat		4			Vallath 1986
Mathur	Palghat		14			Vallath 1986
Mundur	Palghat		6	15		Vallath 1986
Elavancheri	Chittur		30			Vallath 1986
Kudalur	Chittur		28			Vallath 1986
Panangathiri	Chittur		15	15		Vallath 1986
Pallassena	Chittur		100			Vallath 1986
Palavur	Chittur		82			Vallath 1986
Erimayur	Alathur		120	250		Vallath 1986
Kannanurpattola	Alathur		46			Vallath 1986
Kavasseri	Alathur		150			Vallath 1986
Kutallur	Alathur		28			Vallath 1986
Kunisseri	Alathur		120	250		Vallath 1986
Chitalancheri	Alathur		14	30		Vallath 1986
Chulanur	Alathur		42			Vallath 1986
Mangalam	Alathur		8			Vallath 1986
Manjalur	Alathur		35			Vallath 1986

The Palghat Gap Survey

This project was structured around two seasons of field survey. The first survey season took place from October to December 1997, and the second season in January 1999.

Survey Methodology

Within Palghat district, the survey area was restricted to the three taluks (sub-district divisions) that formed the Gap—Palakkad, Chittur, and Allatur (Figure 5-3). Over the course of ten weeks, the survey used as its points of reference the published findings from earlier explorations of the region, especially Valath's 1986 report (Valath 1986). Beginning with a road-based exploration, about one half of the previously recorded sites were located[12]. Once they were mapped and otherwise documented, the published sites then functioned as focal points from which the survey team could radiate out to explore the surrounding landscape.

A radial survey method was chosen for a number of reasons. First, this method offered the hope of recovering evidence of habitation sites associated with the megaliths, something so far not documented in Kerala. Second, by structuring the survey around known sites, the field teams were able to incorporate information gathered from discussions with local farmers, landowners, and village elders. The presence of extant sites nearby often served as the catalyst by which the team members were led to other surviving sites, or where they were able to form an idea about the far denser extent and distribution of sites in the Gap in previous decades. Many sites were retained in local

[12] The remaining sites could not be located and were presumably destroyed by subsequent cultivation and construction activities.

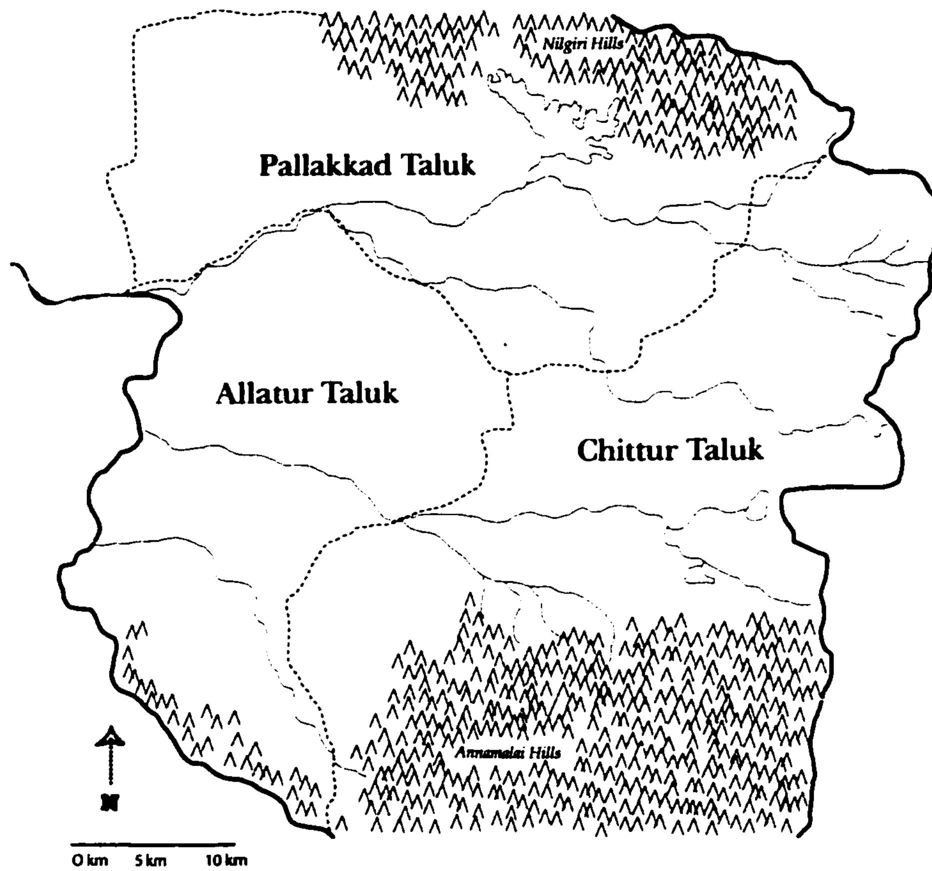


FIGURE 5-3: Taluk Divisions in the Palghat Gap

memory but had long since been destroyed as a result of quarrying, road-building, land leveling and clearing for cultivation, and other forms of human intervention. Third, owing to the extensive amount of surface area under cultivation or construction, better coverage of the survey area was often impossible using other more random sampling survey methods. Paddy fields, for example, left large tracts of land submerged, and attempts early in the first field season to employ a transect-based field walking system resulted in numerous lost hours negotiating narrow, meandering paddy field lanes; large portions of the sampling area had to be written off as simply impossible to navigate. By using known sites as starting points, the survey was able, in many cases, to cover those tracts of land that were relatively undeveloped—temple grounds, private property within villages, outcrops and hills. Maps included in this chapter show the distribution of the principal sites discovered during the survey.

Recording Strategies

In addition to recording the broad distribution of sites across the Gap, particular attention was paid to the two largest megalithic complexes that were discovered during the survey, Pallassena and Pallatteri. Because of the rapid and ongoing destruction of archaeological sites in the region, the decision was made to produce a detailed record of the contents and configuration of these principal megalithic groupings. Each complex was systematically surveyed and mapped in relation to local topographical features. Most of the individual megalithic units within the complexes were also recorded--drawn to scale, photographed, and described. Where possible, samples of pottery from urn burials were collected.

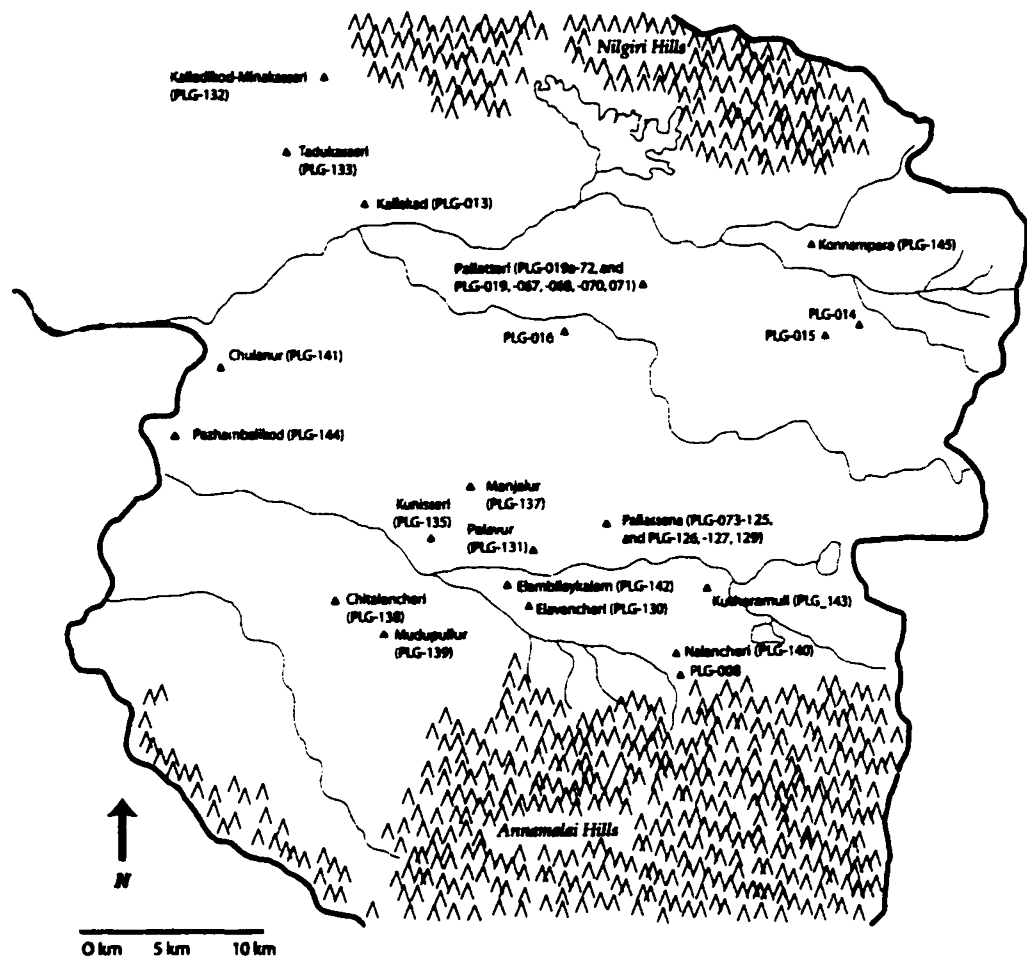


FIGURE 5-4: Sites of the Palghat Gap Survey

A similar procedure was followed for the remaining sites, time permitting. Geographic coordinates for each site were recorded, the site was measured, and local topographic features were noted. When possible, local residents were questioned about the presence of sites in past years, and notes were made about intrusive activities such as road building, dam construction, village use of local soils, etc. When surface ceramic collections were made, 100% percent coverage of the site was conducted, and all diagnostic sherds, regardless of size, were collected. Non-diagnostic sherds were collected when they exceeded two centimeters in size. Sherd collections were bagged, weighed, and counted, and all diagnostic forms were recorded individually (pottery analysis is discussed in detail in Chapter 7).

Site Descriptions

Twenty-eight sites in total were recorded during the Palghat Gap Survey (Figure 5-4). Seventeen of these were megalith sites, and eleven were sherd scatters. The megalith sites will be discussed in the first section; the second section will cover the non-megalith sites.

Megalithic Sites

A total of 17 groups of separate megalithic clusters were identified in this survey of the Gap. The distribution of megaliths appear to come at two levels: large concentrations, such as those at Pallassena, Pallatteri, and Konnampara, with 49 to 52

monuments; and smaller isolated groupings with one to 14 structures[13]. The two largest clusters, Pallassena and Pallatteri, contained 52 and 53 separate megaliths, respectively, which were scattered across an area of three to six hectares. The Konnampara cluster, also one of the larger sites with 49 megaliths, was more tightly packed and covered an area of roughly two hectares. The next largest cluster at Elavancheri contained 14 units. The remainder included clusters of 10 megaliths or less. Altogether over 200 separate megalithic features were identified (Table 5-3). Of the four types of megaliths found in the Gap, slab cists were by far the most numerous, followed by stone circles and urns in smaller numbers, and finally capstones. Some stone circles included slab cists within them. (The various megalith types are described in detail in Chapter 3.)

[13] At the start of the first survey season, each megalithic monument was assigned a separate catalog number, regardless of the size of the site-complex. Hence the megaliths from Pallatteri and Pallassena are assigned serial PLG numbers (PLG-022, PLG-023, etc.). It was decided that this numbering system was unwieldy and ultimately confusing, so all later sites were assigned a single PLG number, and the megaliths within each site were catalogued alphabetically (PLG-145a, PLG-145b, etc.).

TABLE 5-3

Megaliths from the Palghat Gap Survey

Site-Complex	Sites in Complex	Site Type
Pallatteri	PLG-019	Urn burial
	PLG-022	Slab cist
	PLG-023	Slab cist
	PLG-024	Slab cist
	PLG-025	Slab cist
	PLG-026	Slab cist
	PLG-027	Urn burial
	PLG-028	Slab cist
	PLG-029	Stone circle?
	PLG-030	Urn burial
	PLG-031	Urn burial
	PLG-032	Urn burial?
	PLG-033	Urn burial
	PLG-034	Slab cist
	PLG-035	Slab cist?
	PLG-036	Slab cist?
	PLG-037	Urn burial
	PLG-038	Slab cist
	PLG-039	Urn burial
	PLG-040	Slab cist
	PLG-041	Urn burial
	PLG-042	Urn burial
	PLG-043	Jar burials
	PLG-044	Slab cist
	PLG-045	Urn burial w/stone slab
	PLG-046	Slab cist
	PLG-047	Slab cist
	PLG-048	Urn burial
	PLG-049	Slab cist
	PLG-050	Slab cist
	PLG-051	Urn burial
	PLG-052	Urn burial w/stone slab
	PLG-053	Urn burial
	PLG-054	Slab cist?
	PLG-055	Slab cist
	PLG-056	Slab cist
	PLG-057	Slab cist
	PLG-058	Slab cist
	PLG-059	Slab cist
	PLG-060	Slab cist?
	PLG-061	Slab cist
	PLG-062	Slab cist
	PLG-063	Urn burial
	PLG-064	Urn burial
	PLG-065	Urn burial
	PLG-066	Urn burial
	PLG-072	Urn burial
Pallassena	PLG-073	Urn burial
	PLG-074	Capstone
	PLG-075	Capstone
	PLG-076	Slab cist
	PLG-077	Slab cist
	PLG-078	Slab cist
	PLG-079	Slab cist
	PLG-080	Urn burial
	PLG-081	Urn burial
	PLG-082	Urn burial
	PLG-083	Urn burial
	PLG-084	Capstone
	PLG-085	Slab cist
	PLG-086	Slab cist?
	PLG-087	Slab cist
	PLG-088	Stone circle
	PLG-089	Stone circle
	PLG-090	Slab cist
	PLG-091	Slab cist
	PLG-092	Slab cist?
	PLG-093	Slab cist
	PLG-094	Slab cist
	PLG-095	Slab cist?
	PLG-096	Slab cist?
	PLG-097	Slab cist?
	PLG-098	Stone circle w/slab cist
	PLG-099	Capstone
	PLG-100	Slab cist
	PLG-101	Urn burial
	PLG-102	Capstone
	PLG-103	Urn burial
	PLG-104	Slab cist
	PLG-105	Stone circle w/slab cist
	PLG-106	Slab cist
	PLG-107	Slab cist

	PLG-108	Slab cist?
	PLG-109	Slab cist
	PLG-110	Slab cist
	PLG-111	Capstone
	PLG-112	Slab cist
	PLG-113	Stone circle w/slab cist
	PLG-114	Slab cist
	PLG-115	Slab cist
	PLG-116	Slab cist
	PLG-117	Slab cist
	PLG-118	Urn burial
	PLG-119	Slab cist
	PLG-120	Slab cist
	PLG-121	Slab cist
	PLG-122	Slab cist
	PLG-123	Slab cist
	PLG-124	Slab cist
	PLG-125	Slab cist
Elavancheri	PLG-130a	Stone circle w/slab cist
	PLG-130b	Stone circle
	PLG-130c	Stone circle
	PLG-130d	Stone circle
	PLG-130e	Stone circle
	PLG-130f	Stone circle
	PLG-130g	Stone circle w/slab cist
	PLG-130h	Stone circle w/slab cist
	PLG-130i	Slab cist
	PLG-130j	Slab cist
	PLG-130k	Stone circle w/slab cist?
	PLG-130l	Slab cist
	PLG-130m	Slab cist
	PLG-130n	Stone circle
	PLG-130o	Stone circle
Konnampara	PLG-145a	Slab cist
	PLG-145b	Slab cist
	PLG-145c	Slab cist
	PLG-145d	Slab cist
	PLG-145e	Slab cist
	PLG-145f	Slab cist
	PLG-145g	Slab cist
	PLG-145h	Slab cist
	PLG-145i	Capstone
	PLG-145j	Slab cist
	PLG-145k	Capstone
	PLG-145l	Slab cist
	PLG-145m	capstone
	PLG-145n	Slab cist?
	PLG-145o	Slab cist
	PLG-145p	Slab cist
	PLG-145q	Slab cist
	PLG-145r	Slab cist
	PLG-145s	Capstone
	PLG-145t	Slab cist
	PLG-145u	Slab cist
	PLG-145v	Slab cist
	PLG-145w	Slab cist
	PLG-145x	Slab cist
	PLG-145y	Slab cist
	PLG-145z	Slab cist
	PLG-145aa	Capstone
	PLG-145bb	Slab cist
	PLG-145cc	Slab cist
	PLG-145dd	Slab cist
	PLG-145ee	Slab cist
	PLG-145ff	Slab cist?
	PLG-145gg	Slab cist
	PLG-145hh	Slab cist
	PLG-145ii	Slab cist
	PLG-145jj	Slab cist?
	PLG-145kk	Slab cist?
	PLG-145ll	Slab cist?
	PLG-145mm	Slab cist
	PLG-145nn	Slab cist?
	PLG-145oo	Capstone
	PLG-145pp	Capstone
	PLG-145qq	Capstone
	PLG-145rr	Capstone
	PLG-145ss	Capstone
	PLG-145tt	Slab cist
	PLG-145uu	Slab cist
	PLG-145vv	Slab cist
	PLG-145ww	Slab cist
Manjalur	PLG-137a	Slab cist
	PLG-137b	Slab cist
	PLG-137c	Slab cist
	PLG-137d	Slab cist
	PLG-137e	Slab cist
	PLG-137f	Slab cist
	PLG-137g	Slab cist
Pazham-balikode	PLG-144a	Stone circle
	PLG-144b	Stone circle
	PLG-144c	Stone circle
	PLG-144d	Stone circle
	PLG-144e	Stone circle
	PLG-144f	Stone circle
	PLG-144g	Stone circle
Palavur	PLG-131a	Slab cist
	PLG-131b	Slab cist

	PLG-131c	Slab cist
	PLG-131e	Stone circle
	PLG-131f	Stone circle
	PLG-131g	Slab cist?
Elambilay -kalam-	PLG-142a	Slab cist
	PLG-142b	Slab cist
	PLG-142c	Stone circle
	PLG-142d	Stone circle
	PLG-142e	Stone circle
Kallekad	PLG-013	Stone circle?
Kallad-ikod-Mina-kasseri	PLG-132	Urn burial
Tadu-kasseri	PLG-133a	Urn burial
	PLG-133b	Urn burial
Kunisseri	PLG-135a	Slab cist
	PLG-135b	Slab cist
	PLG-135c	Urn burial
Chitalan-cheri	PLG-138a	Slab cist
	PLG-138b	Stone circle
Mudu-pullur	PLG-139	Slab cist
Nalan-cheri	PLG-140	Slab cist
Chulanur	PLG-141	Slab cist
Kuthara-muli	PLG-143a	Urn burial
	PLG-143b	Urn burial
	PLG-131d	Slab cist

A few preliminary observations can be made about the disposition of the megaliths in the region survey. First, and not surprisingly, is the fact that most are located relatively close to a river or one of its tributaries. A preference is also apparent to situate the sites in the 'wedges' of land created by the confluence of waterways. The terrain is composed of vast low-lying irrigated fields interspersed with villages, and punctuated with shallow granitic outcrops and small hillocks. Most of the megaliths were located on or near the outcrops and hillocks, a trait also common to the megaliths in neighboring Coimbatore (Rajan 1990). Conversations with local farmers indicate that megaliths were also located in lower lying areas that are now under paddy cultivation. Two of the sites—Pallassena and Nalancheri—included a solitary unit atop an outcrop, with the remaining units scattered around the base of the outcrop. The megalithic units of four sites—Palavur, Elavancheri, Chulanur, and Elambilaykalam—were spread out across the highest portions of small hillocks. Table 5-3 summarizes the frequency distribution of the main features for each megalithic site.

PLG-019-072: Pallatteri (N 10° 45' 5.6", E 76° 43' 17.5")

The Pallatteri cluster (Figure 5-5) is located in the village of Pallatteri, east of Palghat town on National Highway 47. The site is spread over six hectares, with many of the megaliths preserved on the relatively undisturbed property adjoining the nearby Sri Parukkanchery temple. The site consists of two megalith types, slab cists and urns, each of which appeared to cluster in smaller subgroups. In earlier explorations of the region, Valath reported finding one cist, four hero stones, and one stone circle at Pallassena (Valath 1986), and George reports ten slab cists and one cist circle (George 1975: 158-

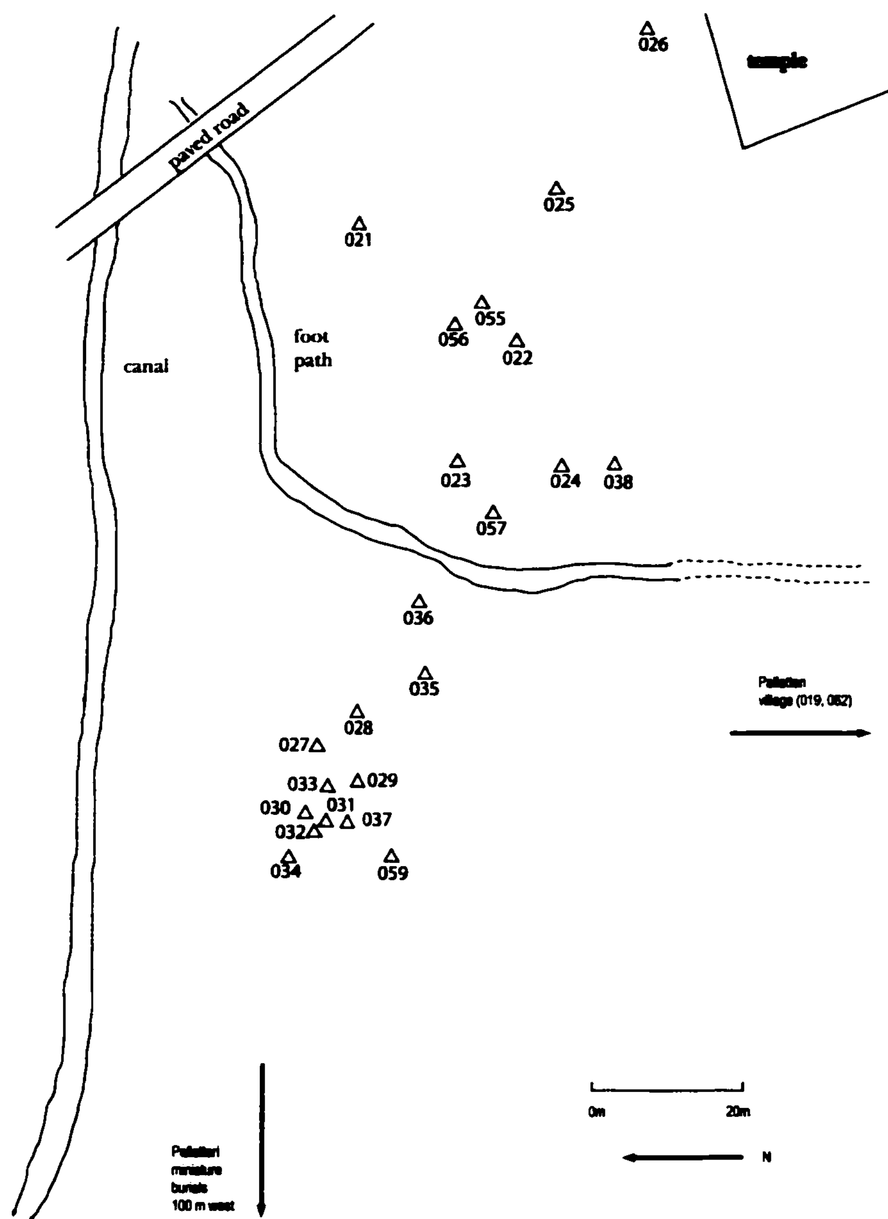


FIGURE 5-5: Map of Pallatteri

59). Our survey recorded 52 visible monuments. One notable feature of the Pallatteri grouping was the separate smaller assemblage of 17 "miniature" megaliths. Consisting of both slab cists and urns, these units were approximately half to one-third the average size of the units found elsewhere in Pallatteri. George (1975) found quartz microliths in this vicinity, but none were recovered during this survey. Several sites (described later in this chapter) that were found near the Pallatteri cluster (PLG-068, PLG-070, PLG-071) may signal habitation sites.

Local residents reported a huge clay *chetti* (pot) that had been recently dug up in an uncultivated field at the center of Pallatteri village. A copy of the June 3 1997 issue of the local newspaper *Pallakkad Malayalam Manorama* showed a photograph of a burial urn large enough to hold a young boy. The urn stood upright to about 1½ meters, was covered by a large flat rock (about .75 to 1 meter in diameter), and was empty. The remains of the vessel included thick coarse sherds, with many body sherds, rim pieces, and decorated neck fragments. This section of the site was surveyed and pottery collected, bagged, and weighed (PLG-019: 162 sherds, 1.95 kg). A survey of the surrounding terrain revealed a slab cist burial in a dry canal a few meters away and nearby were the clear outlines of several more urn burials. These finds were evidence for a much larger megalithic complex, and a systematic survey of village was carried out.

The land around the cemetery complex was mapped by the survey team. All major non-archaeological features were recorded—roads, canals, water hole, temple, etc., in order to provide a context for the archaeological finds and to explain the impact of ground cover on megalithic visibility. To the north of the cemetery is a large artificial tank, bordered by irrigated cultivated fields. A paved road flanks the northeast edge, and

beyond that is a canal (Figure 5-5). Construction of the canal and road probably destroyed some portion of the megalithic complex, but a significant section seems to be contained on the land owned by the temple, which is not cultivated, but rather contains trees and some mild vegetation. Using a map with a scale of 1:400 (1 cm = 4 m), the temple property was surveyed, using 15-meter transects.

The loose fragments of several urn burials from the Pallatteri complex, as well as associated iron fragments, were collected.

Megalith ID	*Megalith Type*	*Sherd Count*	*Sherd Weight*	*Iron*
PLG-027	urn burial	8 sherds,	0.05 kg	
PLG-030	urn burial	24 sherds	0.25 kg	5 iron frags
PLG-033	urn burial	19 sherds	0.125 kg	
PLG-063	urn burial	6 sherds	2.26 kg	
PLG-065	urn burial	59 sherds	1.00 kg	
PLG-072	urn burial	5 sherds	0.675 kg	
PLG-073	urn burial	10 sherds	0.125 kg	

At a point 100 meters west of the temple grounds were two 20-meter square patches of land that had been cleared of overburden in order to serve as wheat-threshing areas. Having recently been cleared to 15 to 20 centimeters below the natural surface, the outlines of a series small urn burials and slab cists could be seen—nine in the first (Figure 5-6) and seven in the second (Figure 5-7). These megaliths were noteworthy because they were smaller than those encountered on the temple grounds—up to about 50 percent smaller. Initial speculations are that these may be either symbolic burials or else infant/child burials, but still part of the same larger complex as those burials on the temple property. It seems likely that more structures exist beneath the vegetation that covers most of this landscape, and that others have been destroyed by the canal

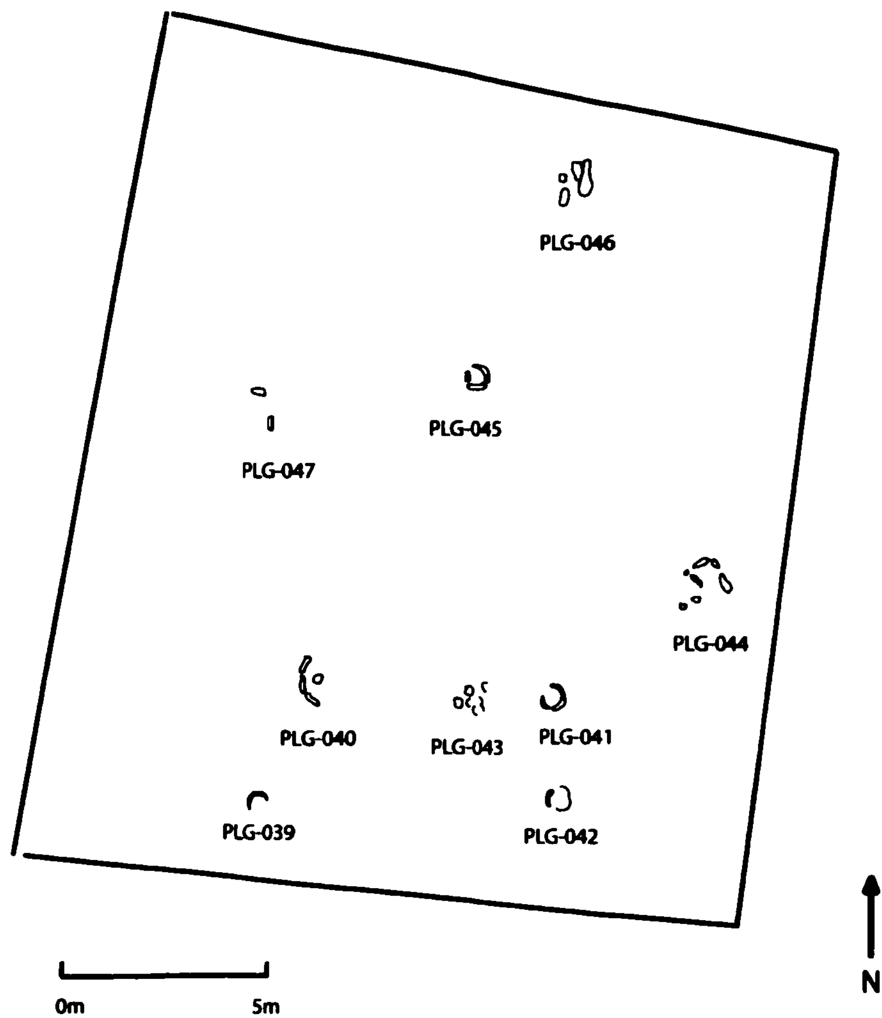


FIGURE 5-6: Pallatteri Miniature Burials I

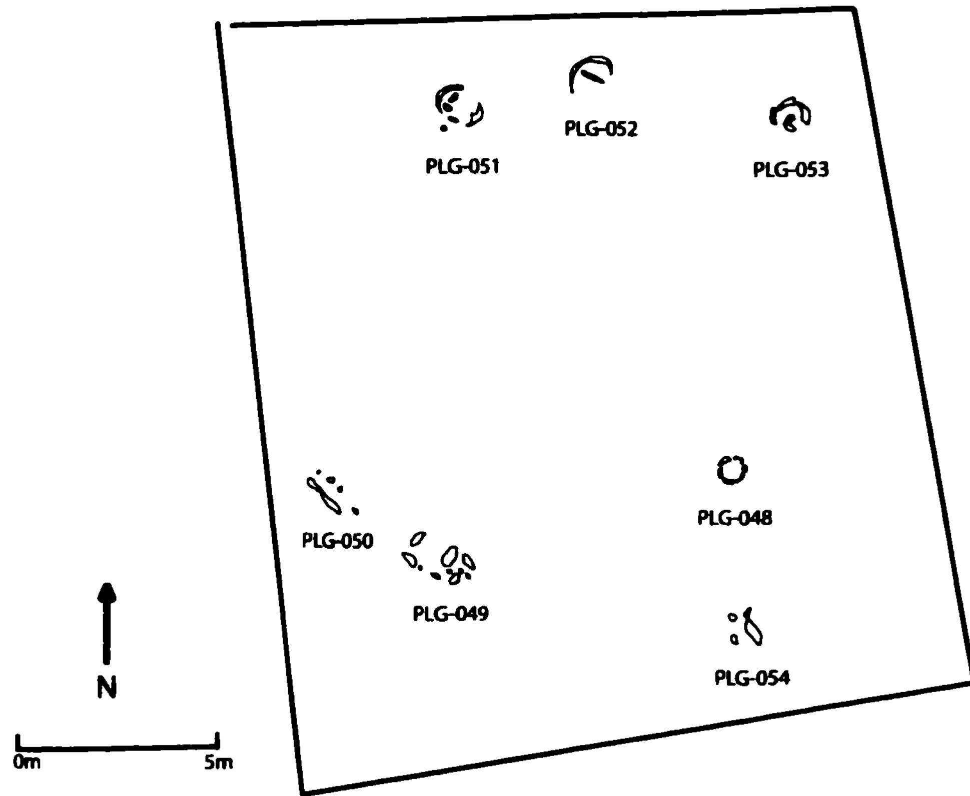


FIGURE 5-7: Pallatteri Miniature Burials II

construction and paddy field development. At the time of the survey, much of the lower lying lands were irrigated for rice cultivation, making access for survey virtually impossible, except along narrow paths bordering the paddy fields. Local residents stated that not many megaliths were found down in the irrigated paddy fields, but that more existed on the adjoining higher scrub area, where coconut, tapioca, and mango are planted. A teak forest once partially covered the area in previous decades. The pots that were found by local residents yielded some broken iron implements, and the urns were pyriform, with no legs. They were generally empty, but some bones may have been found. The loose fragments of the rim of one small urn burial from this cluster was collected (PLG-048: 2 sherds, .075 kg).

Another notable characteristic associated with this complex was the megalith PLG-062. This is an exposed slab cist on a dirt footpath, where the soil has been removed enough to allow us essentially to see a cross section of the ceramics in this slab cist burial (Figure 5-8). This structure was mapped twice, once at 1:25 and again at 1:10, in order to record all the exposed pottery. One piece was long and curved and looked like the South Indian version of an amphora base At least three distinct vessel types could be identified. Some of the looser pieces of pottery were removed and collected, providing a good index set for burial ceramics for the site (PLG 062: 89 sherds, .45 kg).

Each megalith was given an identification number, as listed earlier in Table 5-3 (a question mark indicates that identification is uncertain because of badly degraded condition of the structure).

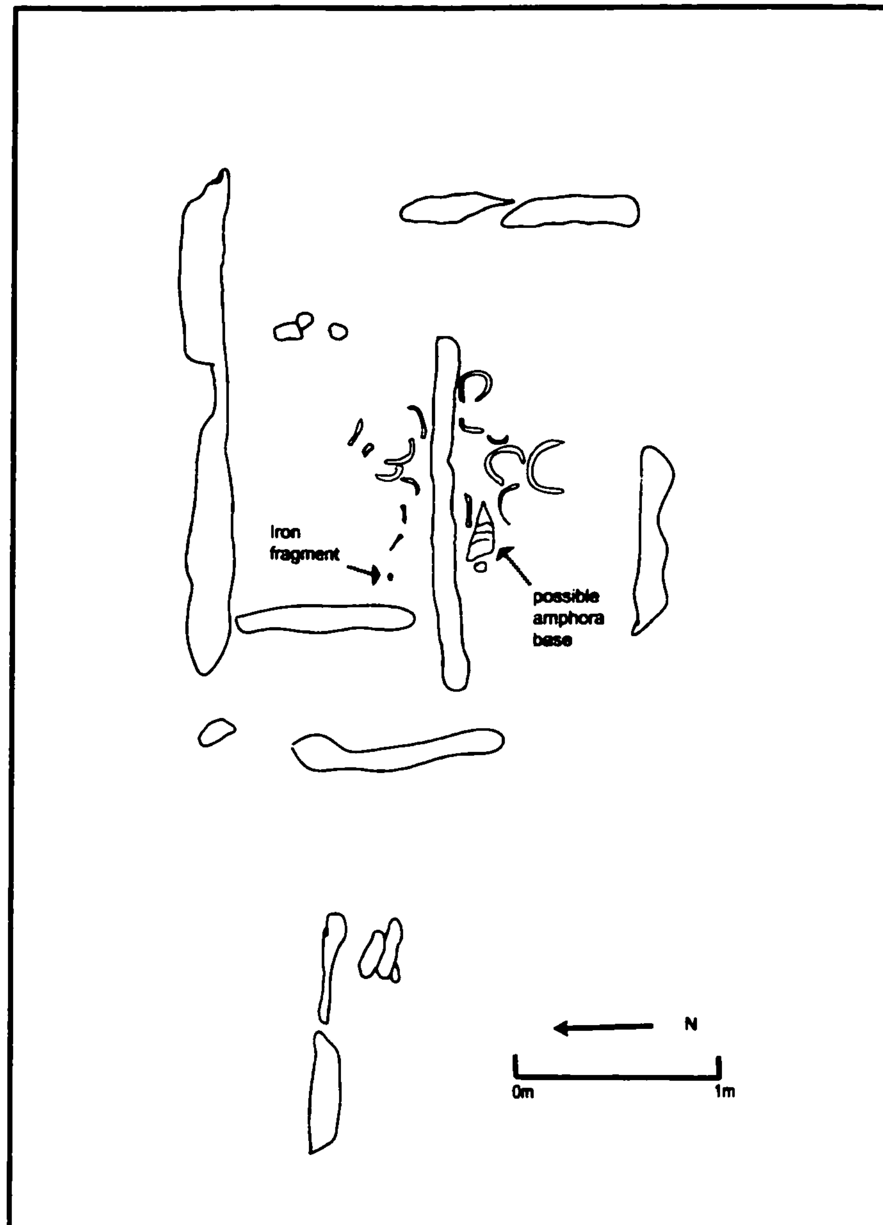


FIGURE 5-8: PLG-062

PLG-073-125: Pallassena (N 10° 37' 10.0", E 76° 39' 12.8")

The Pallassena complex (Figure 5-9) is the second large megalith cluster found in the Gap. It is located on a three-hectare stretch of land that skirts the south and eastern edges of a large granitic outcrop in the middle of Pallassena village. Attention was drawn to the site first by a pocket of earth with large flat stones atop that had been systematically dug into by the local villagers who removed the soil to pad their yards. In profile along the dugout mound were a series of urn burials clustered together along the southeastern base. Large scatters of pottery were also noticed on the surface. Further examination revealed a number of stone circles that dotted the southeast end of the base of the granitic outcrop. In addition, a single well-preserved stone circle as situated at the top the outcrop. Megalith types included urn burials, slab cists, slab cists within stone circles, and capstones—altogether 53 megaliths. (Valath [1986] recorded finding 100 cists in the vicinity; the remainder have presumably since been destroyed.) The southwest border of the outcrop was devoid of megaliths, but one nearby site was characterized by the dense scatter of sherds and may an indicate associated settlement (PLG-127). As with Pallatteri, the general terrain was mapped, as were each of the megalithic features associated with the complex.

The Pallassena megalith site-complex as a whole was called PLG-127. Pottery collected from the surface of the site was catalogued as PLG-126. When the ceramics were associated with a specific megalith, they were catalogued with the number of the associated megalith.

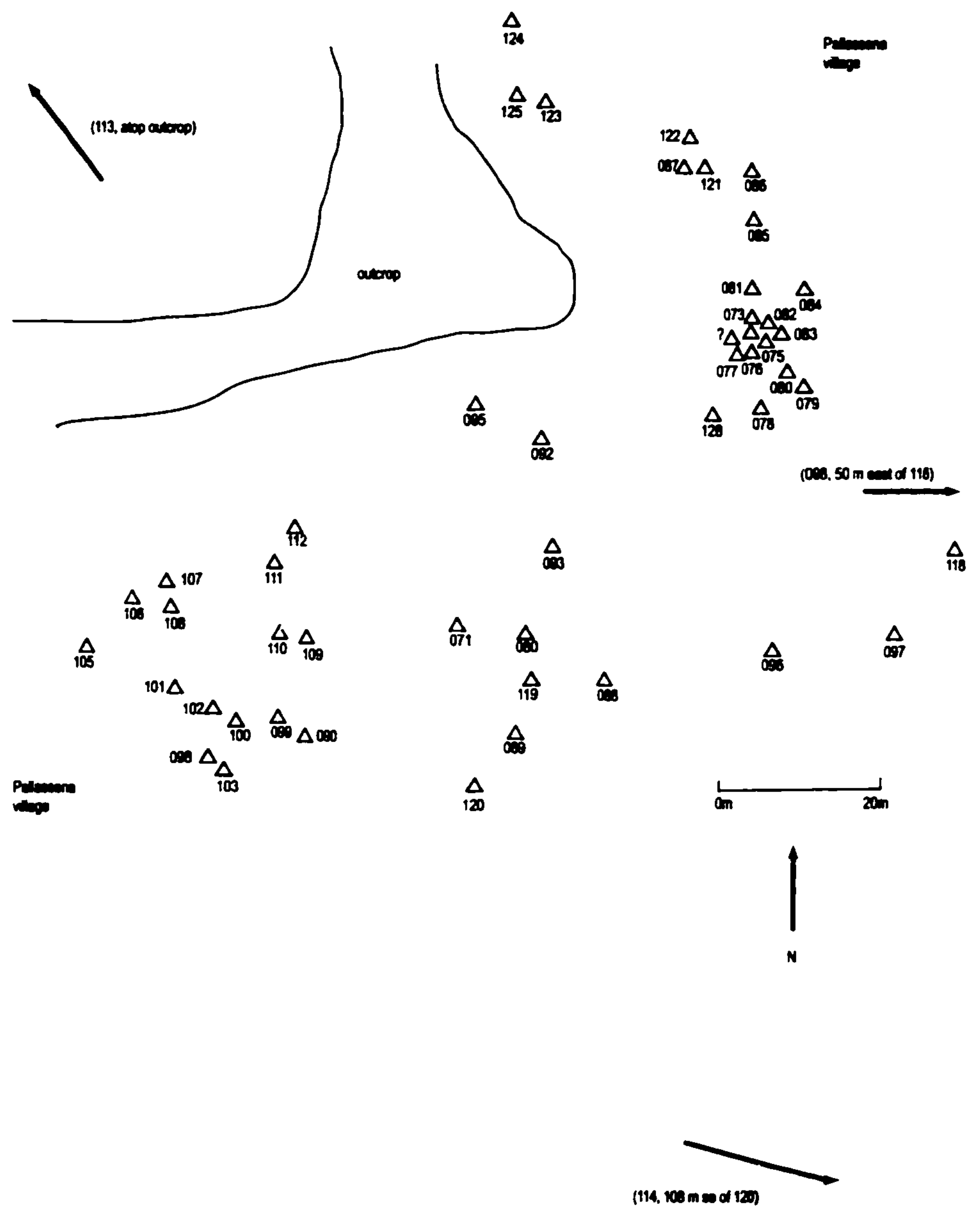


FIGURE 5-9: Map of Pallassena

Megalith ID	Megalith Type	Sherd Count
PLG-126	surface collection	1757 sherds
PLG-082	urn burial	16 sherds
PLG-083	urn burial	6 sherds
PLG-085	urn burial	8 sherds
PLG-118	urn burial	12 sherds

PLG-130: Elavancheri (N 10° 35' 38.8", E 76° 38' 45.8")

The site of Elavancheri (Figure 5-10) is situated along the southwest edge of a grassy scrubland slope of a granite outcrop located on government property. The outcrop is uncultivated and uninhabited (the steepness of the slope and rocky soil made it unsuitable for agriculture). Along the south and southwestern slopes of the outcrop, in a 200-meter square area, are 7 stone circles, five slab cists, and three stone circles enclosing a slab cist. Each megalith was assigned an identification letter (PLG-130a to o). Of particular interest in this cluster was slab cist PLG-130j, in which one granite slab had visible cut marks along one edge.

PLG-145: Konnampara (N 10° 48' 19.6" E 76° 48' 57.9")

Near the end of the second season of survey, a large megalith complex was found at the outskirts of Konnampara town in an area of two square hectares. The site included 39 slab cists and 10 capstones, but lack of time made it impossible to do more that map the site (Figure 5-11). The complex is located in an area with a mild slope and small rocky outcrop to the east (beyond which are supposed to be more sites).

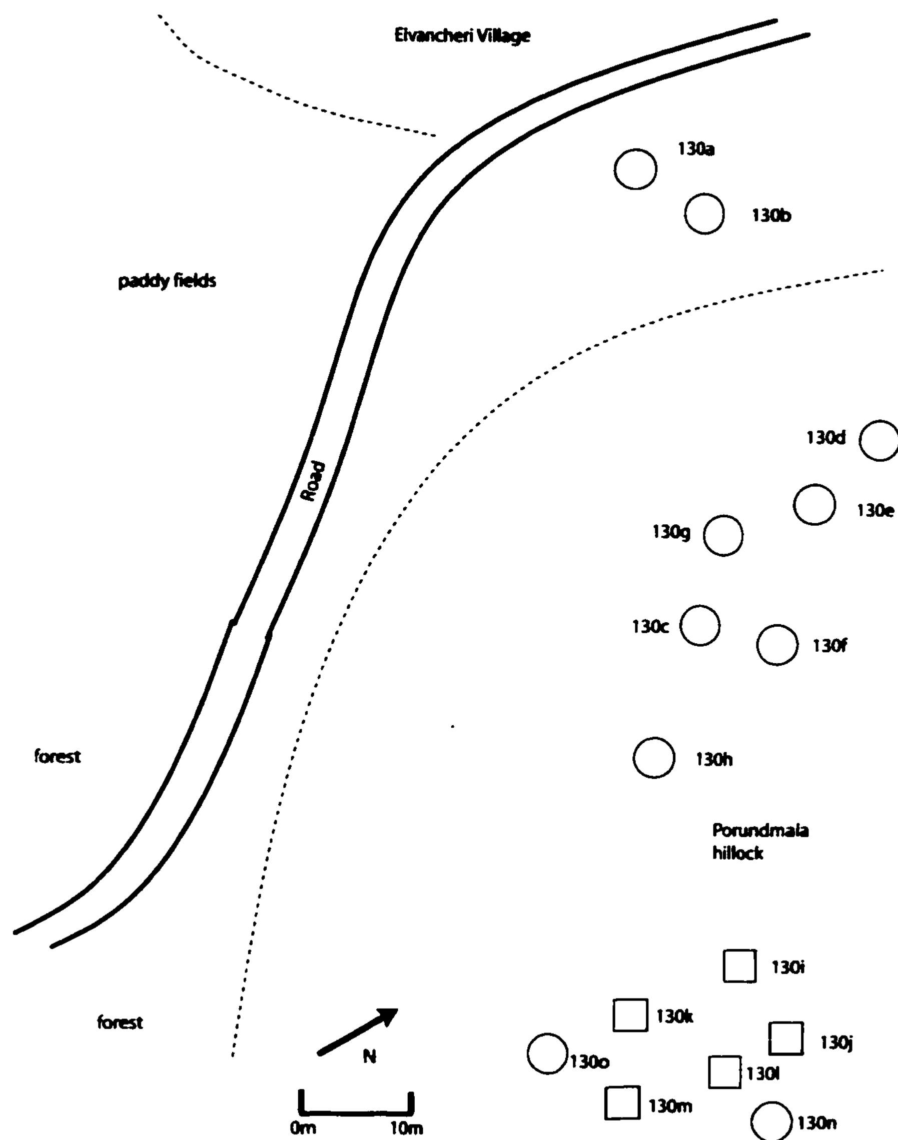


FIGURE 5-10: Map of Elavancheri

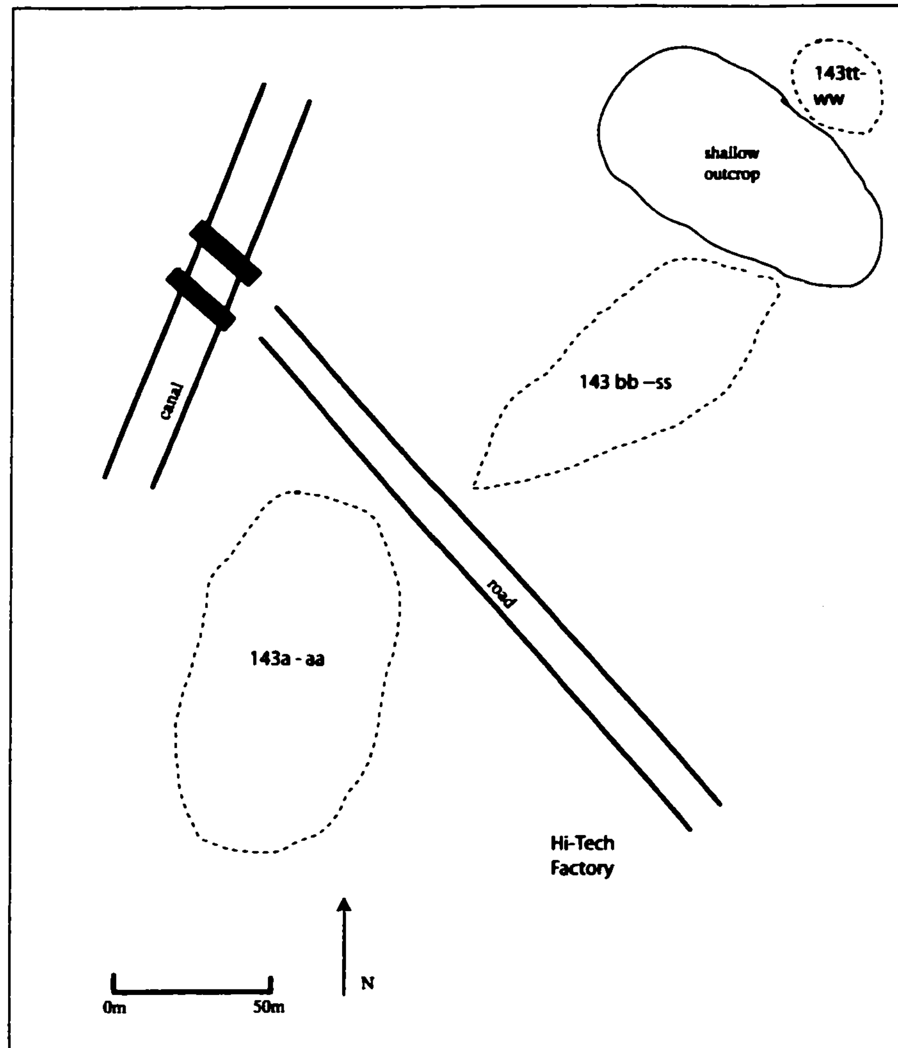


FIGURE 5-11: Map of Konnampara

PLG-137: Manjalur (N 10° 39' 40.2", E 76° 35' 57.3")

The Manjalur site (Figure 5-12) is located on the grounds of the Aiyappan Kava temple in the town of Manjalur and consists of seven slab cists (labeled 137a, b, c, d, e, f, and g) in a 300-square meter area. The interior of two cists had been cleared out, revealing the length of the slabs as they stood vertically. Local villagers report that more cists were present before being destroyed by irrigation canal construction. The land slopes away from the temple, and around the southwestern and western slope, the slab cists are arranged along the slope almost in line. Some sherds were collected along the western slope behind the temple, as were some along the eastern front drive of the temple (PLG-137: 36 pieces, 0.72 kg). A fragment of iron slag was also found.

PLG-144: Pazhambalikode (N 10° 41' 35.6", E 76° 27' 4.8")

Near the main road of the town of Pazhambalikode were seven laterite stone circles (Figure 5-13). The road is bordered to the south by fields and to the north by a granite outcrop. The residents report that more such features existed on various properties but were removed. The megaliths were labeled 144a, b, c, d, e, f, and g and found in area of roughly 20 meters by 35 meters. All but one were in various severe states of destruction; but 140g was fairly intact and measured 30 meters in diameter. Like the site of Chitalancheri (PLG-138, described later in this section), these megaliths are interesting because laterite is not found in the immediate vicinity.

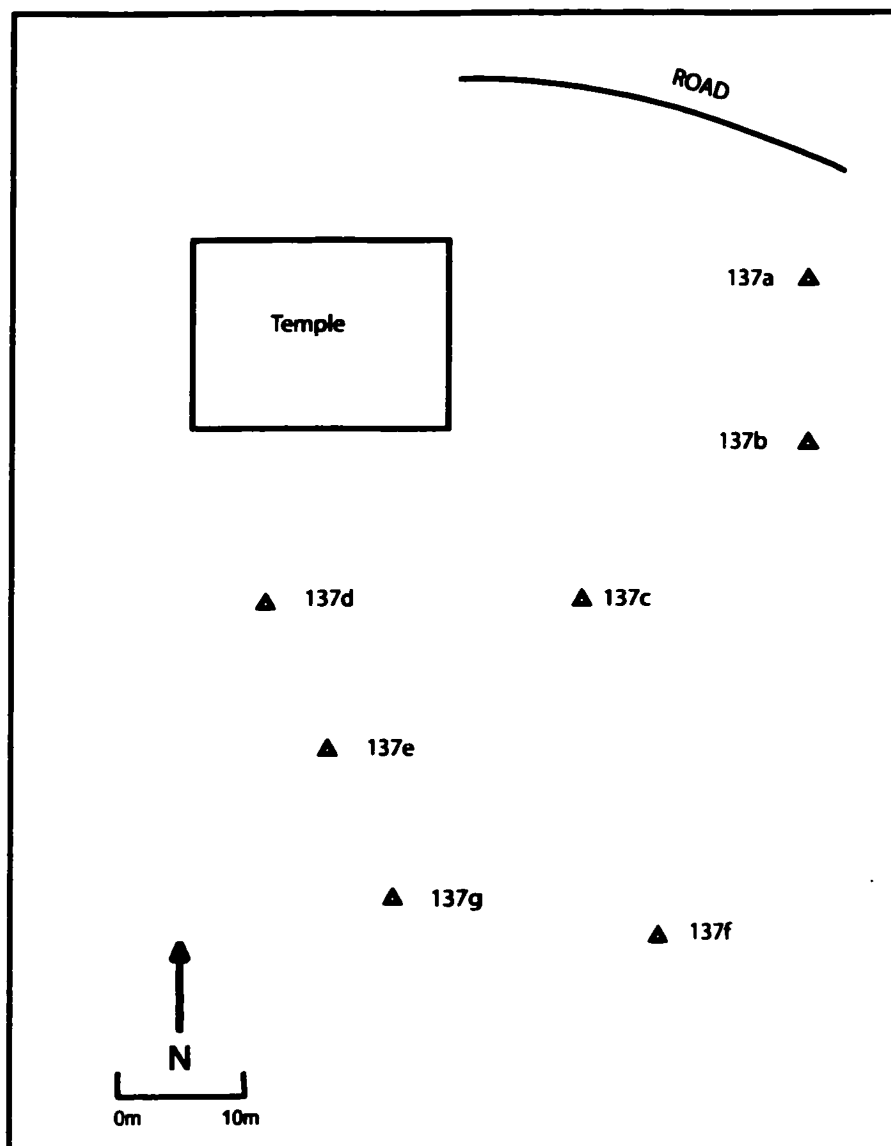


FIGURE 5-12: Map of Manjalur

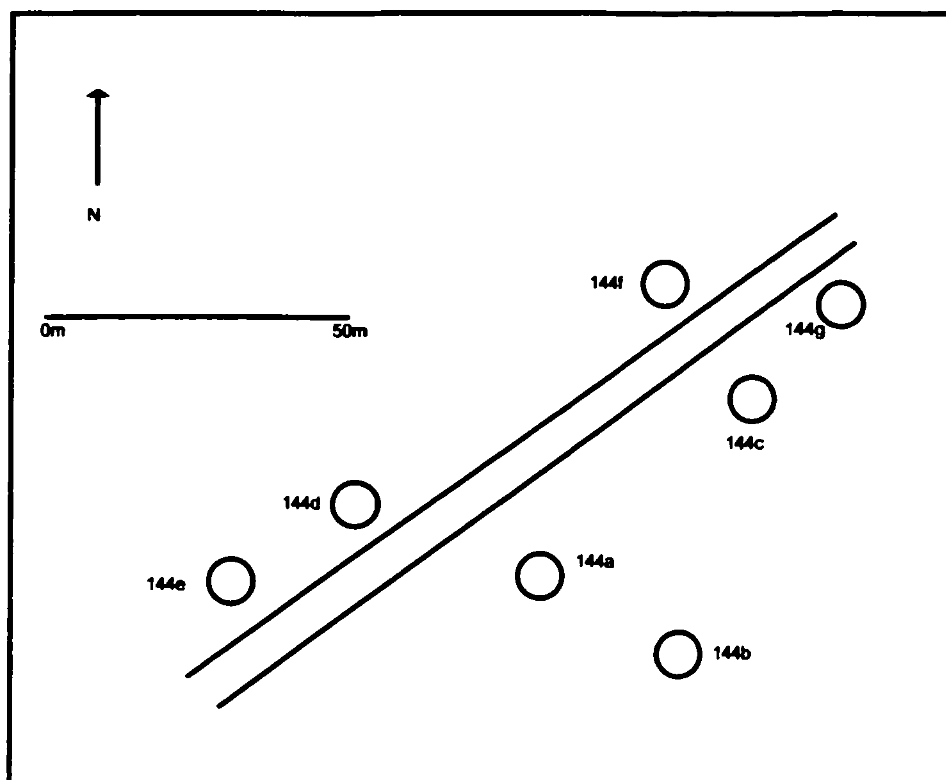


FIGURE 5-13: Map of Pazhambalikode

PLG-131: Palavur (N 10° 38' 02.1", E 76° 37' 18.8")

The site of Palavur (Figure 5-14) is located about five kilometers southwest of Pallassena, where the terrain is wid and shallow, with large long paddy fields broken intermittently by granite outcropping that seem somewhat lower than those near Pallassena. Along a large shallow hillside, where the granitic terrain is currently used for grazing, deep segments of the hillside had been quarried for the last decade. It was apparent that there was little more than 1-2 meters of rocky soil resting above a solid block of granite. Valath (1986) reported 82 cists in the vicinity, many of which were likely destroyed during construction of the paved road that skirts the base of the outcrop to the north and west from Palavur junction. Seven megalithic structures were found along the eastern slope (in a 20 by 25 meter area) and labeled 131a, b, c, d, e, f, and g: four slab cists, two stone circles (one enclosing a cist), and one indeterminate stone formation.

PLG-142: Elambilaykalam (N 10° 35' 10.0" E 76° 38' 28.4")

Elambilaykalam is situated 2.5 kilometers northwest of the site of Elavancheri, at the base of a large granitic outcrop. Two slab cists and three stone circles were found, labeled 142a, b, c, d, and e (Figure 5-15) in a 25 by 45 square meter area. The slab cists were disturbed, but the destruction made it possible to view the structures in cross section. The stone circles (two were also disturbed).were located along the southwest border of the outcrop. Local villagers report that a stone circle used to exist at the top of the adjacent outcrop. Structure 142a was missing its eastern orthostat, providing a view of the interior and the capstone. Structure 142b included an eastern orthostat with a

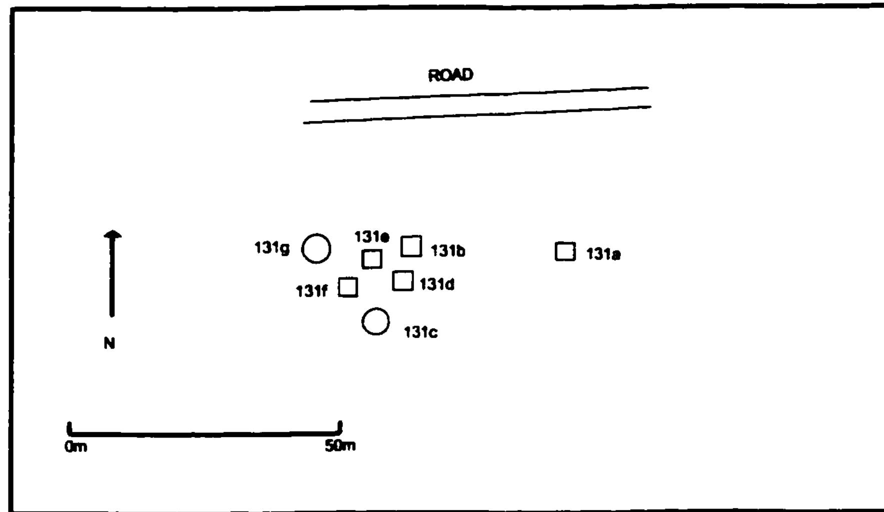


FIGURE 5-14: Map of Palavur

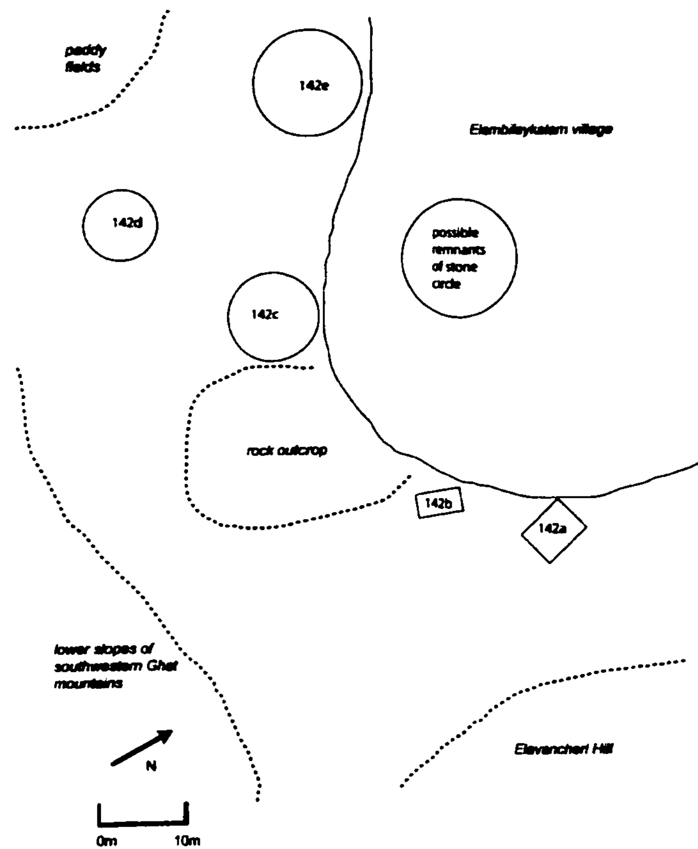


FIGURE 5-15: Map of Elambilaykalam

porthole cut out in the center of the slab. All the stone circles were constructed of granite slabs; 142c measured 9.7 meters in diameter, 142d was 7.3 meters, and 142e was 13.2 meters.

PLG- 013: Kallekad (N 10° 47' 13.6", E 76° 35' 30.8")

The site of Kallekad is located to the west of Palghat town in an undulating pastureland adjoining a granite quarry. The entire pastureland was surveyed in 30-meter transects. A number of deep quarries had been cut, making large water holes for the local villagers and accounting for the heavy disturbance of the landscape. A single possible feature was found—a large boulder positioned on a small overgrown resting atop an apparently natural rock formation. On the western slope were a handful of smaller boulders that appear to form an irregular semicircle around the main boulder. The top surface of the center boulder measures 90 centimeters (N-S) and 110 centimeters (E-W), and is about 80 centimeters in height. The entire area is asymmetrically laid out, but the inner 'ring' of rocks seems to be a uniform 2.7 meters away from the main boulder. The height from the lowest rocks to the center boulder is about 7 meters.

PLG-132: Kalladikod-Minakasseri (N 10° 51' 36.5", E 76° 31' 25.0")

While surveying the villages of Kalladikod and Minakasseri, a single urn burial was discovered in the middle of a small junction between the two villages. The soil here is compact, with little visible granite, and the surrounding cultivation is mostly tapioca and rubber. Conversations with local residents revealed that about 20 urn burials (usually covered with a capstone) and slab cists had been located in the area (the area was in fact

dubbed "Nannangadi Cherambu", that is, "megalith village"), but were destroyed as a result of extensive rubber tree cultivation. The megaliths were spread across several properties in the area and were reported as being "rather small". Some charcoal fragments were found at the bottom of one vessel, but no other finds were reported.

PLG-133: Tadukasseri (N 10° 49' 23.3", E 76° 28' 20.0")

Not far from Kalladikod in Tadukasseri village were two buried urns (PLG 133a and PLG-133 b) and the possible remnants of a third and fourth. Some sherds of thick coarse pottery were also found, as well as an unusual fragment of a fine ware with red slip and yellow painted lines (possibly a sherd of Russet Coated Painted Ware) (PLG-133: 6 sherds, 0.05 kg).

PLG-135: Kunnisseri (N 10° 39' 45.4", E 76° 34' 56.3")

The village of Kunnisseri is located along the crest of rocky outcrop surrounded by forest. Two slab cists and one urn burial (PLG 135a, 135b, and 135c) were found in what is now a coconut field near the village. The villagers reported that large stone features used to be located on an adjacent piece of private property. They also claimed that in the general area there were a variety of megaliths, which, based on their descriptions, included slab cists (with and without port holes) and urn burials.

PLG-138: Chitalancheri (N 10° 36' 0.1", E 76° 33' 13.1")

The site of Chitilancheri contained one slab cist and one stone circle (PLG-138a and 138b), both built of laterite blocks. The slab cist carried a capstone and side slabs, and villagers report that it used to contain an urn about a meter below ground level. This site is noteworthy because the laterite is not available in the immediate vicinity, a phenomenon similar to Pazhambalikode site.

PLG-139: Mudupullur (N 10° 36' 40.1", E 76° 31' 39.2")

The site of Mudupullur consists of a single slab cist made up of six stone slabs. Two additional stone circles in the near vicinity were tentatively identified (one possibly enclosing a slab cist) but were too damaged to permit certain identification.

PLG-140: Nalancheri (N 10° 35' 23.8", E 76° 39' 36.2")

The site of Nalancheri (Figure 5-16) comprises a granite outcrop, its base heavily overgrown, a portion of which is being cleared for a new road. At the top of the outcrop, called Nalancheri Hill, was a well preserved, intact slab cist with an extant flat capstone (Figure 5-19). At the base of the west and northwest slopes of the outcrop are paddy fields, where one or two possible slab cists were located, now badly degraded. The remains of the slab of a possible slab cist were discovered along the side of the newly cut road. Along adjacent field paths some sherds (including one with thumb-pressed marks like those found on urns) and iron slag were collected (PLG-140: 125 sherds, 0.75 kg).

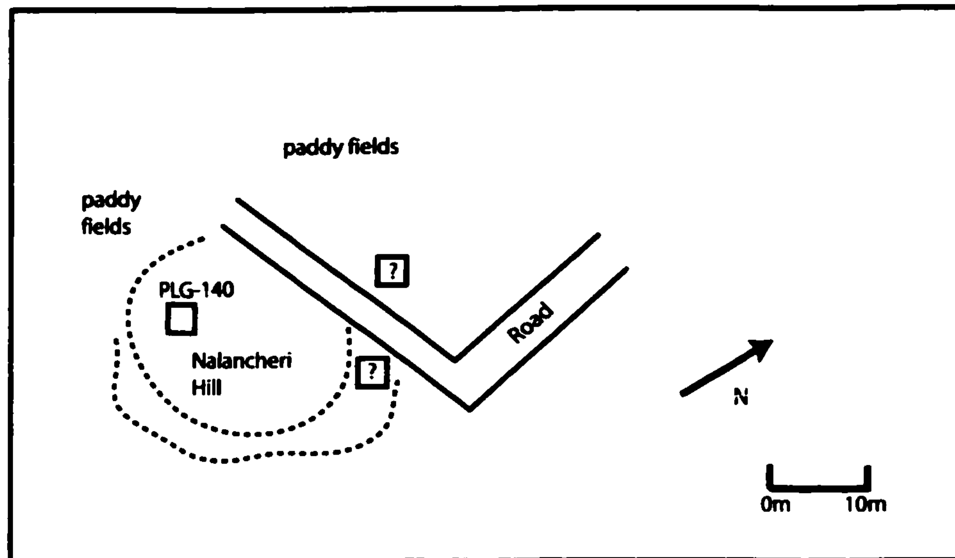


FIGURE 5-16: Map of Nalancheri

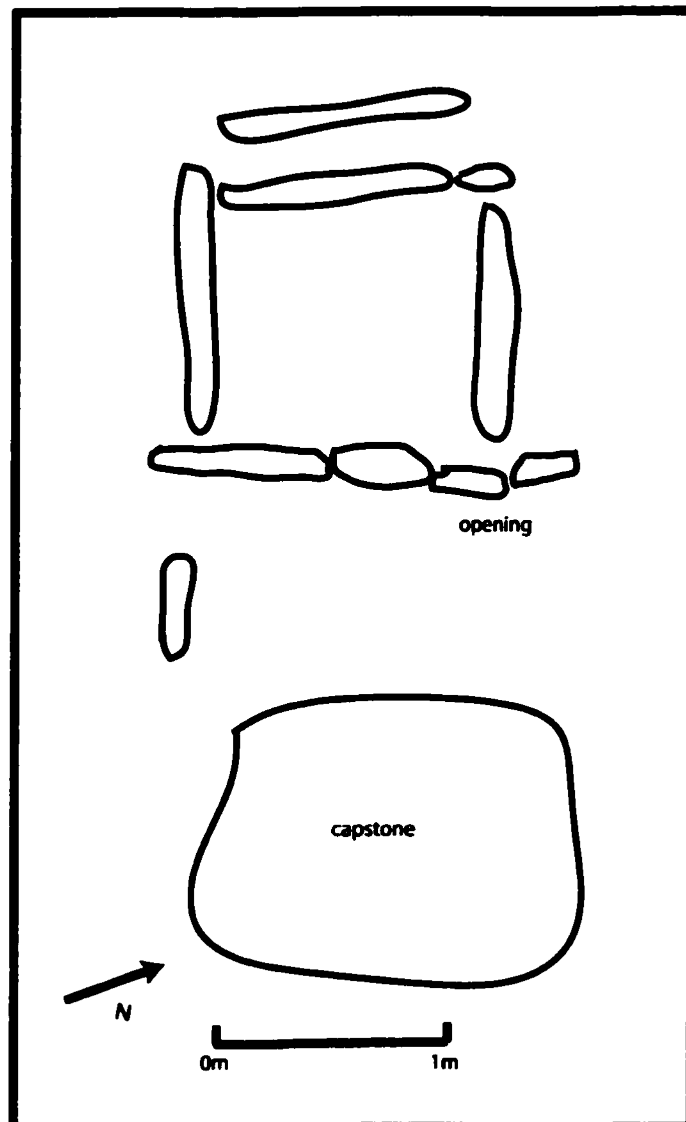


FIGURE 5-17: Nalancheri Outcrop Megalith

PLG-141: Chulanur (N 10° 42' 1.6", E 76° 28' 9.8")

The Chulanur site is located on vast spread of rocky outcrops along an open plain, just east of Chulanur village. In the village on top of the outcrop was one slab cist. The village residents report that one other megalith had been opened by villagers, who reported finding an urn, iron, beads (10-15), small pots, and terracotta pendants. A few pottery fragments were collected from this site (PLG-141: 4 sherds, 0.25 kg).

PLG-143: Kutharamuli (N 10° 36' 23.6", E 76° 43' 13.5")

The Kutharamuli site lies near the base of the Ghat Mountains in the southeast portion of the Gap. The soil here is very hard and infertile. The village of Kutharamuli (very near Edachira) contained two urn burials (PLG-143a and 143b). One outline is clear; the other is partial. The diameter of the whole urn burial is 76 centimeters; the second one is 58 centimeters. Local residents report that several more used to be present but were destroyed as the house yards were constructed. Apparently this whole area contained a dense and tight cluster of urns.

Non-Megalith Sites

The remaining 11 sites located in the Palghat Gap are surface sherd scatters, the sizes of which varied. Seven of these probable settlements are associated with or located very near a megalithic grouping, often within five hundred meters. Four sites have no clear association with megaliths. Many of these sites were made visible because their locations included uncultivated fields, empty plots or compounds, or soil that had been

recently overturned owing to canal building, or housing development, or field construction (Table 5-5). (See Figure 5-4 for the location of the following sites.)

Table 5-4

Non-Megalithic Sites from the Palghat Gap

Site Number	Location	Geocoordinates	Size	Description
PLG-019	Pallatteri	N 10° 45' 5.6" E 76° 43' 17.5"	13 by 23 meters	Sherd scatter
PLG-067	Pallatteri	N 10° 45' 14.1", E 76° 43' 33.8"	55 meters long and 5.7 meters	Sherd scatter
PLG-068	Pallatteri	N 10° 45' 9.9" E 76° 43' 33.9"	10 by 10 meters	Sherd scatter
PLG-069	Pallatteri	N 10° 45' 13.6" E 76° 43' 15.6"	5 by 5 meters	Sherd scatter
PLG-070	Pallatteri	N 10° 45' 8.8" E 76° 43' 20.5'	3 by 4 meters	Sherd scatter
PLG-071	Pallatteri	N 10° 45' 11.9" E 76' 43' 8.9"	20 meters by 2 meters	Sherd scatter
PLG-127	Pallassena	N 10° 37' 31.1" E 76° 39' 21.6"	7.5 meters by 13 meters	Sherd scatter
PLG-129	Pallassena	N 10° 37' 10.3" E 76° 43' 25.5"	15 meters by 18.5 meters	Sherd scatter
PLG-014	Kozhinampara	N 10° 37' 36.7" E 76° 49' 58.2"	30 meters by 140 meters	Sherd scatter
PLG-015	Nallepalli Agraham	N 10° 43' 47.1" E 76° 46' 44.4"	150 meters by 12 meters	Sherd scatter
PLG-016	Chitturpuzha Riverbank Shrines	N 10° 45' 4.3" E 76° 40' 7.3"	25 meters by 15 meters	Sherd scatter
PLG-008	Western Ghat Outcrop Shelter	N 10° 34' 4.4" E 76° 43', 14.2"	4.1 meters by 2.5 meters	Sherd scatter

PLG-019 (N 10° 45' 5.6", E 76° 43' 17.5")

PLG-019 is a sherd scatter within the parameters of the Pallatteri complex, in a field surrounding urn burial PLG-019a. The site measured 13 by 23 meters (PLG-019: 162 sherds; 1.95 kg).

PLG-067 (N 10° 45' 14.1", E 76° 43' 33.8")

The PLG-067 sherd scatter, measuring 55 meters long and 5.7 meters wide, is located in the Pallateri region, in the banks and base of a freshly dug dry canal, with overturned earth along its banks. Sherds were collected from the inside banks and base of the canal (PLG-067: 160 sherds, 0.85 kg).

PLG-068 (N 10° 45' 9.9", E 76° 43' 33.9")

PLG-068 is a sherd scatter measuring 10 by 10 meters, along a dirt path amidst the Pallatteri cluster. Sherds, including a few good diagnostic samples, were recovered near an exposed canal opening (PLG-068: 32 sherds, 0.125 kg).

PLG-069 (N 10° 45' 13.6", E 76° 43' 15.6")

PLG-069 is a site sherd scatter measured about 5 by 5 meters and was found amidst the Pallatteri cluster along small canal near slab cist PLG-034 (PLG-069: 20 sherds, 0.10 kg).

PLG-070 (N 10° 45' 8.8", E 76° 43' 20.5")

PLG-070, measuring about 3 by 4 meters, was characterized by a dense mound of sherds on a field path in the Pallatteri complex (PLG-070: 302 sherds, 2.5 kg).

PLG-071 (N 10° 45' 11.9", E 76' 43' 8.9")

PLG-071 is a scatter of sherds, measuring 20 meters by 2 meters, along a dirt path cutting through the paddy fields near the Pallatteri cluster (PLG-071: 368 sherds, 1.6 kg).

PLG-127 (N 10° 37' 31.1", E 76° 39' 21.6")

PLG-127 is a dense sherd scatter (PLG-127: 1908 sherds, 13.99 kg) is located in the yard of a village resident to the southwest of the outcrop of the Pallassena cluster. It measured 7.5 meters by 13 meters.

PLG-129 (N 10° 37' 10.3", E 76° 39' 25.5")

PLG-129 is a collection of sherds comes from a survey of the field (15 meters by 18.5 meters) in the vicinity of the Pallassena complex (PLG-129: 140 sherds, 2.0 kg).

PLG-014: Kozhinampara (N 10° 41' 36.7", E 76° 49' 58.2")

Just west of the town of Kozhinjampara is an open uncultivated schoolyard field, the surface of which was densely and evenly covered with sherds. The northeastern edge of the field borders a steep incline leading down to a quarry. Although there are reports of megaliths in the vicinity, none were found during the survey. After carrying out 100 %

coverage of the accessible area, both ceramics and iron slag were collected. The iron seemed to be concentrated in the middle portion of the fields. The entire area yielded pottery, although the greatest concentration was in the middle area near the quarry border. The entire area measures 30 meters (NW-SE) by 140 meters (N-S). There was no indication of any subsurface features, but the number and variety of ceramics (many which were badly abraded) indicates some sort of past activity. The ceramics are mostly of smallish size—2 to 5 centimeters. There is, however, a good proportion of rim sherds, as well as a variety of clay paste, tempers, and decoration. The iron pieces are also of varying size (PLG-014: 2460 sherds, 12.1 kg).

PLG-015: Nallepalli Agraham (N 10° 43' 47.1", E 76° 46' 44.4")

Sherds were collected along the main street of a Brahmin *agraham* (settlement) at Nallepalli town. The total sherded area measured 150 meters long and 12 meters wide. There are numerous sherds, roof tiles, etc., along the road, especially around the small *ambalam* (temple). With no obvious indications of an ancient occupation, it is likely that many of these samples represent recent ceramic forms, no more than 50 to 100 years old, which will be useful as indices of modern ceramics (PLG-015: 362 sherds, 1.37 kg).

PLG-016: Chitturpuzha Riverbank Shrines (N 10° 45' 4.3", E 76° 40' 7.3")

PLG-016 is situated south of Palghat on empty government property bordering on the Chitturpuzha River and measured 25 meters by 15 meters. Here were found 3 small overgrown Hindu shrines, constructed of brick and plaster, and 2 newer ones (one dated 1969). The scattered sherds along cleared pathways down to the river's edge will, like

those of PLG-015 from Nallepalli, will serve as modern index ceramics (PLG-016: 184 sherds, 0.625 kg).

PLG-008: Western Ghat Outcrop Shelter (N 10° 34' 4.4", E 76° 43', 14.2")

In the course of surveying the southern region of the Gap that directly borders the Western Ghats, local farmers reported a track leading up to a massive granite outcropping on which two *topikals* could be found. Along the track, an exposed bank of earth contained embedded small sherds and bone fragments, which were collected (PLG-007, coordinates N 10° 34' 16.5", E 76° 43' 26.8") (PLG-007: 46 sherds, 0.125 kg). The section exposed here and elsewhere along the path appears to display some broad stratigraphic layers, the most noticeable being a dry, rock-hard sandy sediment sandwiched in between two moister, reddish, more typical local soils. The artifacts bordered the base of the dry layer and the top of the second moist layer and was associated with numerous pebbles at the same level. Further down the same path, more sherds were encountered on the path where it sloped upward and the soil was broken and disturbed (PLG-007a) (PLG-007a: 21 sherds, 0.125 kg).

The mountainside had dense vegetation and numerous boulders varying in size from about 50 centimeters to well over one meter in size. At 300 meters, the survey team located a granite outcrop with a large, roughly 4 to 5 meter split in the middle. Balanced along the top of this divide were two large boulders, 20 meters up—the *topikals* described by the farmers. This entire outcrop is 25-30 meters high, broken irregularly, except for what look like chunks 'cut' out of the side. Within the vertical break in the middle were to be seen several lines of large cut marks (about 5-10 m above level) which

looked weathered and possibly old. Within the break was a smaller boulder that also had smaller cut marks.

Along the southern edge of the formation was an angled cave-like shelter bordered on two sides by the outcrop and on the third side by a large boulder. This enclosed area had been cleared of brush and on the surface could be seen small sherds and what looked like burnt wood fragments. The sherds included some rim fragments and body sherds with either scratch marks or ridges. The shelter measured 4.1 meters by 2.5 meters and the site was called PLG-008 (PLG-008: 114 sherds, 0.40 kg).

Preliminary Interpretation of Survey Data

The analysis of megaliths in the Palghat Gap is based on the assumption that there is a correlation between a person's social position during life and that person's treatment in death.[14] Although there has been justified criticism about inferring a one-to-one identification between social status and mortuary practice (e.g., Shanks and Tilley 1987), the mortuary event is generally a deliberate and public display and the features of the burial may be used to express differences or similarity with other segments of society (Rosenswig 2000: 432). In his study of shaft tombs from the Formative and Early Classic periods in West Mexico, Beekman points out that there is a considerable morphological range in the elements of tomb construction, and that certain recurring

[14] As was pointed out in Chapter 3, not all megaliths in South India contain skeletal remains, and therefore cannot strictly be considered burials. But excavated megaliths have demonstrated the similarity of features and artifacts across the range of megalithic structures, whether or not they have contained bones. For this study, based primarily on visible grave construction and relative spatial patterning, I am working on the assumption that the Palghat megaliths carry at least a symbolic mortuary meaning.

themes—such as variability in labor expenditure between tombs and selection of certain architectural features over others—may indicate the existence of ranked, competing lineages (Beekman 2000: 393). For the megaliths of the Palghat Gap, the assumption is made that mortuary treatment was directly symbolic of the social order, until further and more sophisticated research permits more nuanced interpretations; in this case the expectation is that there existed, at the least, some relationship between the deceased and the living that is exhibited in the deceased's treatment after death (Nelson 1995: 599). The megalithic features, ranging from slab cists to urn burials to stone circles, are heterogeneous enough to allow for possible variations in meaning. A brief consideration will be made of megalith location, site composition, and site size.

As described earlier, the Palghat Gap is intersected by the Bharatapuzha River, along with a number of its tributaries and subtributaries, with the result that much of the region lies in relatively close proximity to water. Thus it is not surprising to note that many of the megalith sites in the Gap lie near a waterway, but what is interesting to observe is the degree of proximity to waterways. Figure 5-5 shows that nearly all of the megalith sites are located within five kilometers of a river. Eight sites (Chulanur, Pazhambalikod, Elambilaykalam, Elavancheri, Konnampara, and, to a lesser extent, Pallatteri, Chitalancheri and Mudupullur) are situated near the point where two waterways converge. Such a distribution points to a preference for the proximity of a water source in settlement patterning in the Gap. Whether the rivers and tributaries served principally as transport routes is not clear. Since the Palghat Gap was essentially the only thoroughfare between the Coimbatore uplands and the Malabar Coast, it seems reasonable to assume that travel through the Gap was structured around the waterways

that run roughly east-west through the Gap; hence settlements (and thus mortuary sites) are most likely spring up on or near these waterways.

In a survey of a densely populated and cultivated region such as the Palghat Gap, it is extremely difficult to discuss site size variability. All the megalithic sites, both single finds and clusters, were located amidst occupied villages, temple property, and paddy fields, and it is reasonable to assume that the survey team would not have had access to all the structures that had been erected over the course of time.[15] Conversations with local residents further confirms that many of the localities had in previous decades housed many more monuments that were now destroyed or under irrigation.

In the Palghat Gap, slab cists comprise the overwhelming majority of megaliths overall—nearly 50% of all megaliths found during the survey were slab cists. It is tempting to conclude that this particular feature characterizes the megalithic horizon within the Palghat Gap. If slab cists are the "typical" megalith of the Palghat region, then what can be inferred by the presence of urn burials, capstones, and stone circles? Urns are made of the same clay as the pottery of region, and capstones and stone circles make use of the local raw materials, so the answer does not lie in differential access to resources. Although it is a difficult question to answer, it is necessary to at least begin to speculate on the choices and strategies that were involved in megalith construction at the community level. The choice of megalith type may have been limited, and their distribution wide, but the intra-site variability suggests some degree of intra-community

[15] It is certainly not a coincidence that the largest sites in the Gap were located on relatively open tracts of land that were free of contemporary settlements and cultivation activity.

differentiation.[16] The predominance of slab cists may initially lead one to hypothesize that this megalith type is indicative of a larger—and therefore non-elite—segment of the population, but such a hypothesis contradicts the implication the outcrop slab cist that characterized the Nalancheri site.

Megalith variability within and among the Palghat sites will be addressed in greater detail in Chapter 7, in conjunction with the ceramic data from these sites. In the following chapter, the ceramics from the Palghat Gap survey will be discussed.

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[16] It must be reiterated that very often the megalith types discussed here co-occur within a single burial. The predominant megalith type in adjacent district of Coimbatore, to cite just one example, are stone circles enclosing a slab cist (Rajan 1990). Although every effort was made during the Palghat Gap survey to identify as many co-occurring features as possible, the fact remains that many of the sites were degraded, obscuring their original configuration.

CHAPTER 6

IDENTIFICATION AND CLASSIFICATION OF CERAMICS FROM THE PALGHAT GAP SURVEY

The purpose of this chapter is to discuss the classification scheme for the ceramics from the Palghat Gap survey. Of particular interest in this study are the cultural, social, ideological, and economic factors that may have influenced ceramic variability in the context of the Palghat Gap region, which may provide insights into the uses of material culture in early Tamil society.

Using Ceramics to Study Social Organization

In order to answer questions of social differentiation, either vertically or horizontally, one must first understand the role of ceramics in archaeological inquiry. The study of ceramic features rests on the presumption of a systematic relationship between material culture production and the social environments in which the objects are produced and used. As with any other artifacts, the analysis of ceramic data involves the recognition of patterns (Sinopoli 1991: 124). Approaches to the study of ceramic variability will differ, depending on the questions that the researcher intends to address. A first and often central goal is the development of a taxonomic procedure that will organize a ceramic assemblage and allow the assemblage to be compared with other collections (Neff 1993: 24). In addition to organizing a mass of ceramics, a classification scheme based on identifying regularities then assumes that the patterning within the collection corresponds to a culturally relevant mode of behavior. The underlying

proposition is that variability in artifacts, as objects created by people, embody the organizational principles of human categorization processes (Miller 1985: 1). For instance, in his study of African pottery techniques, Gosselain found a correlation between the contexts in which technical behaviors are created and reproduced and the networks of social interaction that are responsible for the construction of identities (Gosselain 2000: 209). It has been argued that assuming a correlation between archaeological units and cultural behavior or values is little more than an extension of the culture-historical approach (Neff 1993: 24), but it can it also be argued that it is an unavoidable practice at the preliminary stage of any archaeological analysis. No classification system will be entirely replicable and consistent (Whittaker, Caulkins, and Kamp 1998), but it is an essential component of any ceramic analysis. Sinopoli isolates three basic requirements that all ceramic studies must satisfy: a sufficiently large sample to represent the site or region under study; a collection strategy that allow the sample to be representative of the region or site; and a method of organizing the ceramic collection in such a way that makes clear the traits relevant to a particular research question (Sinopoli 1993: 1).

The first step in the study of any archaeological material is, of course, placing the material into some sort of classificatory system (Sinopoli 1991: 43). There are a variety of ways to organize ceramic data, and the method of organization and variables focused on depend largely on the cultural questions being explored by the scholar. Although initial ceramic sorting is a means of assessing the heterogeneity of the collection, the typology should also in some way reflect actual patterns in the data, in order to reflect the

makers' conscious decisions (Sinopoli 1991: 43). In addition to defining variables, one must consider how those variables will be measured and recorded (Sinopoli 1993: 2).

The underlying assumption in the use of ceramics to address issues of social complexity and structure is the idea that, in some way, information on social complexity is encoded within at least some of the features of the ceramics. Since ceramics are produced and utilized in a social context, it seems reasonable to assume that potters are active and/or passive transmitters of social information (Sinopoli 1993: 4). Focusing on the ceramics from a particular region or site increases the chances that the categories developed by the archaeologist may actually reflect the work of potters engaged in cultural transmission (Neff 1993: 31). One must determine whether patterns of ceramic variation derive from 1) differing levels of social complexity, 2) variations in ethnic identity, 3) temporal changes, 4) inter-workshop influences, 5) consumer choices in vessel type and decoration, or 6) vessel function (Sinopoli 1999: xx).

Traditional Classification Schemes for South Indian Ceramics

Effective comparative ceramic typologies do not exist for early South India. Pottery is used most often as the principal diagnostic category for dating South Indian archaeological sites, and traditional classifications have been useful in so far as they help to delineate broad chronological parameters. Tamil Neolithic sites, for example, are said to be represented by five major pottery types: Red Ware, Tan Ware, Grey Ware, Brown Ware, and Black Ware, with coarse, slipped, and burnished sub variants (Narasimhaiah 1980: 32). The main category of ceramics associated with the South Indian Iron Age is Black and Red Ware, already discussed in Chapter 3, which appears in a variety of sub-

types across southern portion of the subcontinent. Subsidiary ware categories are also noted in site reports and include those generally termed Red Ware, Black Ware, and Red Polished Ware (e.g., Rajan 1994: 76-80; Mehta and George 1978: 10-19). The Early Historic is mostly closely associated with foreign wares, and the key indigenous ceramics linked to this period, Rouletted Ware and Russet Coated Painted Ware, are both distinctive and well described in the literature. Based on site report descriptions, Black and Red Ware, Black Ware, Red Polished Ware appear to continue into occupation phases of the medieval period. The so-called medieval period of South Indian sites is most often associated with a ceramic termed Coarse Red Ware but also include other wares such as Coarse Red Ware and Celadon Ware (e.g., Raman 1988: 14-15). When published exemplars are available, these various wares are not well documented or standardized, nor are they associated with technical descriptions of the pottery. Numerous difficulties arise with the classificatory schemes described here. The lack of systematic description and analysis has resulted in a great deal of overlap in terminology. This is compounded by the relatively vague descriptions and imprecise illustrations associated with each ware in published reports, especially for Kerala and Tamil Nadu.

Analysis of Ceramics from the Palghat Gap Survey

Given the deficiencies of existing classificatory schemes, the Palghat Gap ceramic analysis was formulated with three specific goals. First, and most important, it was thought that this would be an opportunity to forego existing classificatory schemes for South Indian ceramics and treat a new collection of pottery as an undifferentiated mass,

thereby forming categories and types that are hopefully generated from inherent distinctions. Since it is probable that the Palghat survey collection represents a chronological range from at least Iron Age to the present, perhaps a small step may be made in this direction as a result of work done on the Palghat Gap Survey. Although the vast majority of sherds are small in size, making vessel type distinctions difficult, a variety of other traits can still be distinguished and interpreted; a database of variable measurements and descriptions would facilitate future comparative studies in the region. The second goal is to relate the ceramics with human behavior—in this case, variability between mortuary sites and between mortuary sites and settlements. The corpus will be addressed in a later chapter to identify inter-site and sub regional patterns within the Palghat Gap. Finally, the Palghat samples will be compared to exemplars derived from published from other reports from other sites in Kerala and Tamil Nadu.

A total of 9506 pieces of ceramics were recovered from the Palghat Gap survey. Of this sample, 308 were classified as rim sherds. Some difficulties presented themselves in the measurement of the ceramics, mostly as a result of the size of the sherds recovered. Because most of the sherds were very small, it was not always possible to determine some features, such as vessel size (although an attempt was made to infer vessel size using other measurements, as described later in this chapter). Nevertheless, it was possible to isolate a number of important variables that could be used to address the specific research question about the degree of artifact variability within and among the Palghat Gap sites: paste color, inclusion density and size, surface treatment, and rim morphology.

Because a central goal of this study is to use the mortuary and ceramic assemblage to determine the nature and degree of social complexity within the Palghat Gap, it was decided to focus here on the detailed study of the rim forms from the survey. Although sherd size was so small, when rims were available, an analysis of rim morphology, ware type, and surface treatment was expected to generate the greatest amount of consistent and productive data across sites. Rim characteristics would be helpful, not only for inter- and intra-site comparisons, but also possibly to identify functional and chronological categories.

Ceramic Variable Definitions: All Rims

A primary focus of this project's ceramic analysis was rim morphology and ware type. Using the rim sherd sample, a selection of variables were recorded for the each individual rim. An attribute analysis of the rim sherd sample was carried out in order to isolate some of the significant stylistic and morphological characteristics of the ceramic assemblage. Data were entered in Excel worksheets and filtered through an Access database. The attributes selected for study are described below.

Paste Color, Exterior and Interior Surface Colors

Paste color and exterior and surface colors were recorded for all rims. Percentage and size of inclusions were noted with the aid of a hand lens with 10x magnification. Based on an analysis of all the diagnostic rims from the Palghat survey, a total of 31 categories (see Table 6-1) were identified for the paste and surface colors. Of these, ten categories contained nine or more exemplars (Figure 6-1):

1. ORANGE
2. BROWN
3. BLACK
4. WHITE
5. RED
6. GRAY
7. LIGHT BROWN (BUFF)
8. DARK BROWN
9. LIGHT ORANGE
10. ORANGE/BROWN
11. ORANGE/RED
12. ORANGE/GRAY
13. ORANGE/BLACK
14. BROWN/RED
15. BROWN/BLACK
16. BROWN/GRAY
17. LIGHT RED
18. RED/BLACK
19. RED/GRAY
20. GRAY/BLACK
21. BROWN W/LIGHT BROWN (BUFF) CORE
22. BROWN W/DARK BROWN CORE
23. BROWN W/ORANGE CORE
24. BROWN W/GRAY CORE
25. BROWN W/BLACK CORE
26. ORANGE W/BROWN CORE
27. ORANGE W/GRAY CORE
28. BLACK W/BROWN CORE
29. ORANGE W/BLACK CORE
30. GRAY W/BROWN CORE
31. YELLOW

TABLE 6-1: Color Code Categories for Paste/Surface/Slip Analysis

Orange (n=51)
Brown (n=105)
Black (n=23)
Gray (n=14)
Buff/Light Brown (n=18)
Orange/Brown (n=27)
Brown with Gray Core (n=12)
Brown with Black Core (n=21)
Orange with Brown Core (n=36)
Orange with Black Core (n=9)

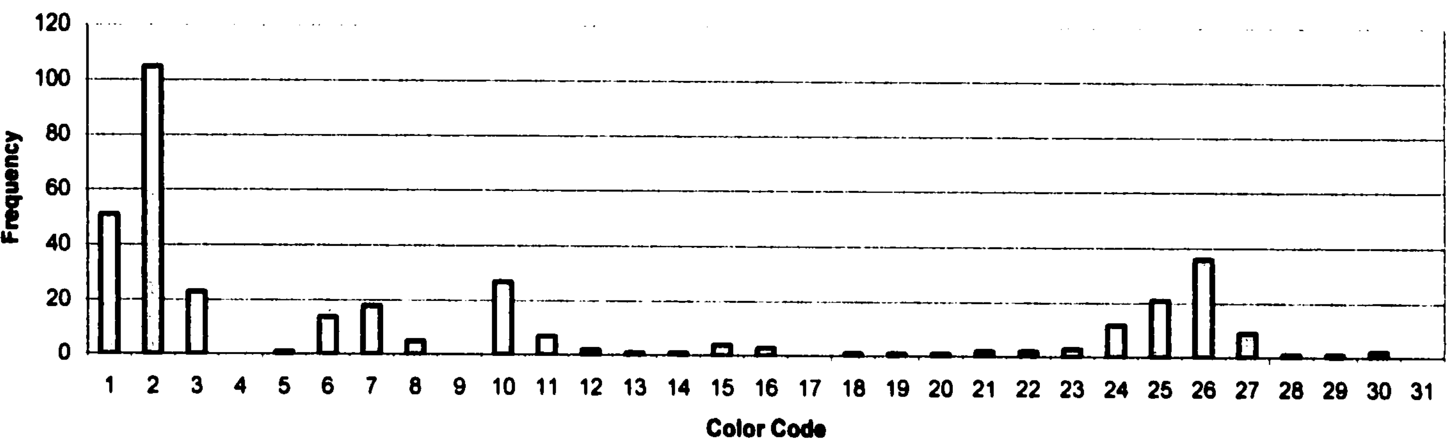
A total of eight categories dominated the colors associated with exterior surfaces of the rims (Figure 6-2):

Orange (n=105)
Brown (n=19)
Black (n=33)
Red (n=31)
Buff/Light Brown (n=24)
Light Orange (n=22)
Orange/Brown (n=29)
Orange/Red (n=18)

Where there were no visible traces of slip, exterior surfaces were mostly in the Orange, Orange/Brown, Light Orange, and Buff/Light Brown categories. Where slip was visible, exterior surfaces colors were more varied, but Orange, Red, and Orange/Red dominated.

A total of nine categories represented color associated with interior surfaces of the rims (Figure 6-3):

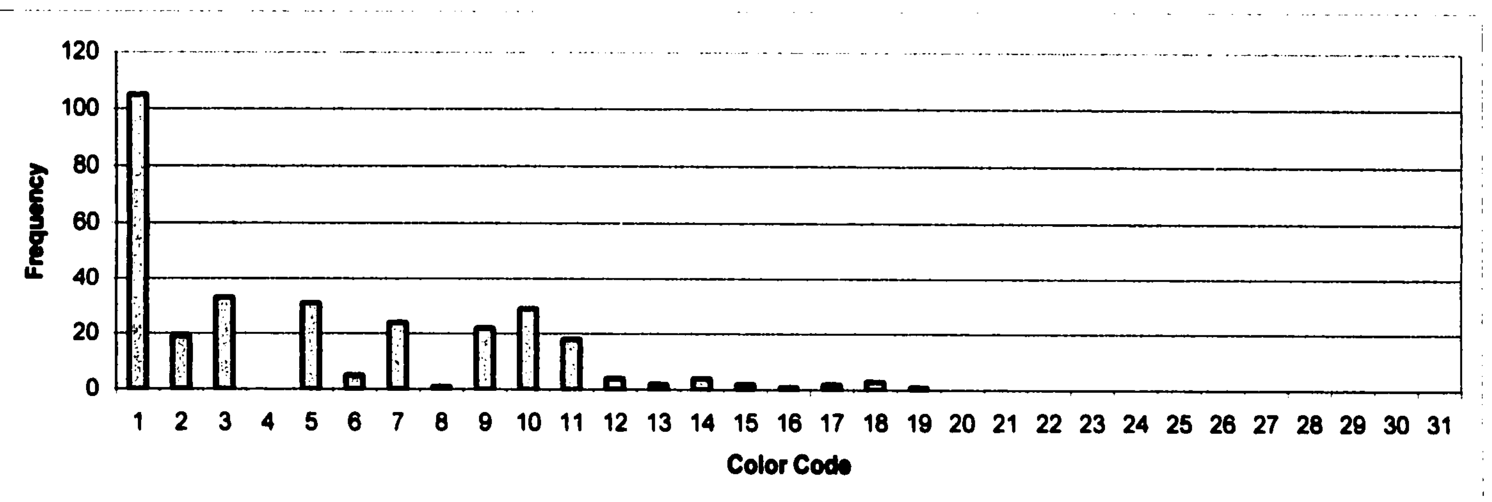
Orange (n=98)
Brown (n=24)
Black (n=15)
Red (n=50)
Gray (n=15)
Buff/Light Brown (n=27)
Light Orange (n=21)
Orange/Brown (n=35)
Orange/Red (n=14)



Color Code Legend:

1. ORANGE
2. BROWN
3. BLACK
4. WHITE
5. RED
6. GRAY
7. LIGHT BROWN (BUFF)
8. DARK BROWN
9. LT ORANGE
10. ORANGE/BROWN
11. ORANGE/RED
12. ORANGE/GRAY
13. ORANGE/BLACK
14. BROWN/RED
15. BROWN/BLACK
16. BROWN/GRAY
17. LT RED
18. RED/BLACK
19. RED/GRAY
20. GRAY/BLACK
21. BROWN W/LT BROWN (BUFF) CORE
22. BROWN W/DK BROWN CORE
23. BROWN W/ORANGE CORE
24. BROWN W/GRAY CORE
25. BROWN W/BLACK CORE
26. ORANGE W/BROWN CORE
27. ORANGE W/GRAY CORE
28. BLACK W/BROWN CORE
29. ORANGE W/BLACK CORE
30. GRAY W/BROWN CORE
31. YELLOW

FIGURE 6-1: Frequency Distribution of Paste Color for All Rims



Color Code Legend:
1. ORANGE
2. BROWN
3. BLACK
4. WHITE
5. RED
6. GRAY
7. LIGHT BROWN (BUFF)
8. DARK BROWN
9. LT ORANGE
10. ORANGE/BROWN
11. ORANGE/RED
12. ORANGE/GRAY
13. ORANGE/BLACK
14. BROWN/RED
15. BROWN/BLACK
16. BROWN/GRAY
17. LT RED
18. RED/BLACK
19. RED/GRAY
20. GRAY/BLACK
21. BROWN W/LT BROWN (BUFF) CORE
22. BROWN W/DK BROWN CORE
23. BROWN W/ORANGE CORE
24. BROWN W/GRAY CORE
25. BROWN W/BLACK CORE
26. ORANGE W/BROWN CORE
27. ORANGE W/GRAY CORE
28. BLACK W/BROWN CORE
29. ORANGE W/BLACK CORE
30. GRAY W/BROWN CORE
31. YELLOW

FIGURE 6-2: Frequency Distribution of Exterior Surface Color for All Rims

Frequency

120
100
80
60
40
20
0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Color Code

Color Code Legend:

1. ORANGE
2. BROWN
3. BLACK
4. WHITE
5. RED
6. GRAY
7. LIGHT BROWN (BUFF)
8. DARK BROWN
9. LT ORANGE
10. ORANGE/BROWN
11. ORANGE/RED
12. ORANGE/GRAY
13. ORANGE/BLACK
14. BROWN/RED
15. BROWN/BLACK
16. BROWN/GRAY
17. LT RED
18. RED/BLACK
19. RED/GRAY
20. GRAY/BLACK
21. BROWN W/LT BROWN (BUFF) CORE
22. BROWN W/DK BROWN CORE
23. BROWN W/ORANGE CORE
24. BROWN W/GRAY CORE
25. BROWN W/BLACK CORE
26. ORANGE W/BROWN CORE
27. ORANGE W/GRAY CORE
28. BLACK W/BROWN CORE
29. ORANGE W/BLACK CORE
30. GRAY W/BROWN CORE
31. YELLOW

FIGURE 6-3: Frequency Distribution of Interior Surface Color for All Rims

In all cases, color evaluation was somewhat subjective, and many of the color categories graded—for instance, from brown to orange, and from orange to red. For the purposes of this study, it was decided that it would be more useful to reduce the color categories to a few broader, more inclusive ones, based on the predominant color represented. Paste color, interior surface, and exterior surface were therefore categorized according to whether they were Black (color codes 3 and 28), Red (color codes 5, 17, 18, and 19), Orange (color codes 1, 8, 9, 10, 11, 12, 13, 26, and 27), Brown (color codes 2, 7, 8, 21, 22, 23, 24, and 25), and Other (color codes 4, 6, 20, 30, and 31). Figure 6-4 and the Table 6-2 show the frequency distribution of the broader color categories.

Table 6-2

Frequency of Paste and Surface Colors: All Rims

	Black	**Red**	**Orange**	**Brown**	**Other**
Paste Color	24	3	123	160	17
Exterior Surface	31	42	191	50	8
Interior Surface	15	46	188	55	20

Surface Treatment

Evidence of surface treatment—defined simply as any identifiable traces of the way the vessel surface was finished before or after firing (Sinopoli 1993: 41)—was rather limited in the Palghat corpus, and includes slips, washes, and burnishing. Information was recorded for both interior and exterior surfaces of the diagnostic sherds.

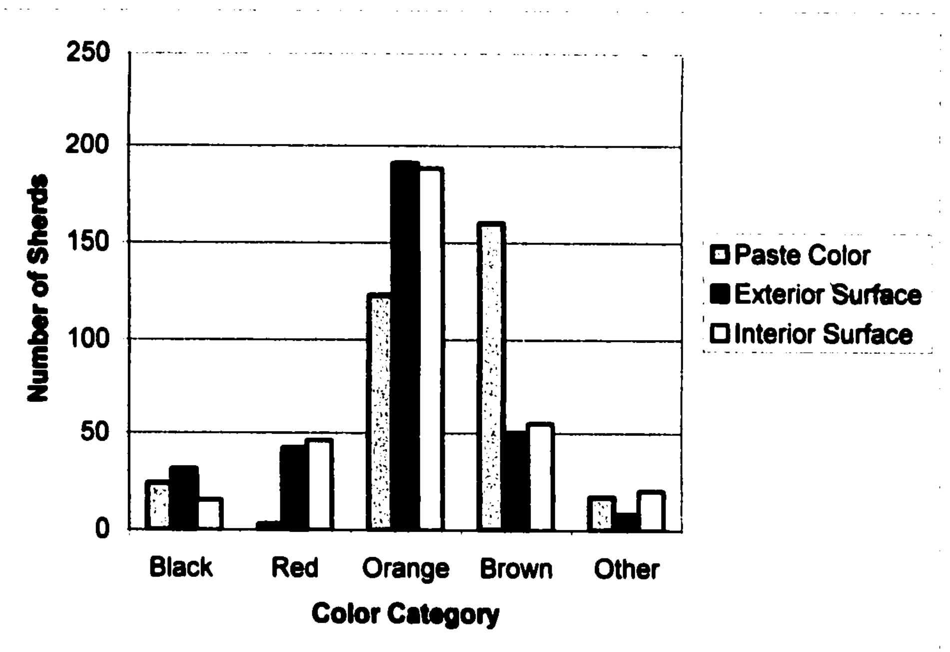


FIGURE 6-4: Frequency of Paste and Surface Colors for All Rims by Color Category

The majority of the rims (n=186) had no visible traces of slip or other treatment on the exterior surface. Of those with slip or possible traces of slip (n=111), slip colors were Orange, Black, Red, Orange/Brown, or Orange/Red, as shown in Table 6-3. The majority of the rims (n=208) had no traces of visible slip along the interior surface of the rim. Of those with slip or possible traces of slip (n=98), colors were mostly Orange, Red, Orange/Brown, or Orange/Red.

Table 6-3

Frequency of Interior and Exterior Slip Colors: All Rims

	Black	Red	Orange	Brown	Other
Interior Surface	15	33	25	3	1
Exterior Surface	5	37	27	4	1

Inclusion Density and Size

Inclusion density was determined based on the density chart drawn from Sinopoli's analysis of Vijayanagara ceramics (Sinopoli 1993: 59) (Figure 6-5). Percentage values for inclusion density were coded for the rims: 5%, 10% 15%, 20%, and 25%. Maximum inclusion size was also recorded, where the largest inclusions were less than 1 millimeter, 2 millimeters, or 3 millimeters. Most of the diagnostic sherds had densities in the 5% and 10% range (Figure 6-6), and most inclusions measured less than 1 millimeter in size (Figure 6-7).

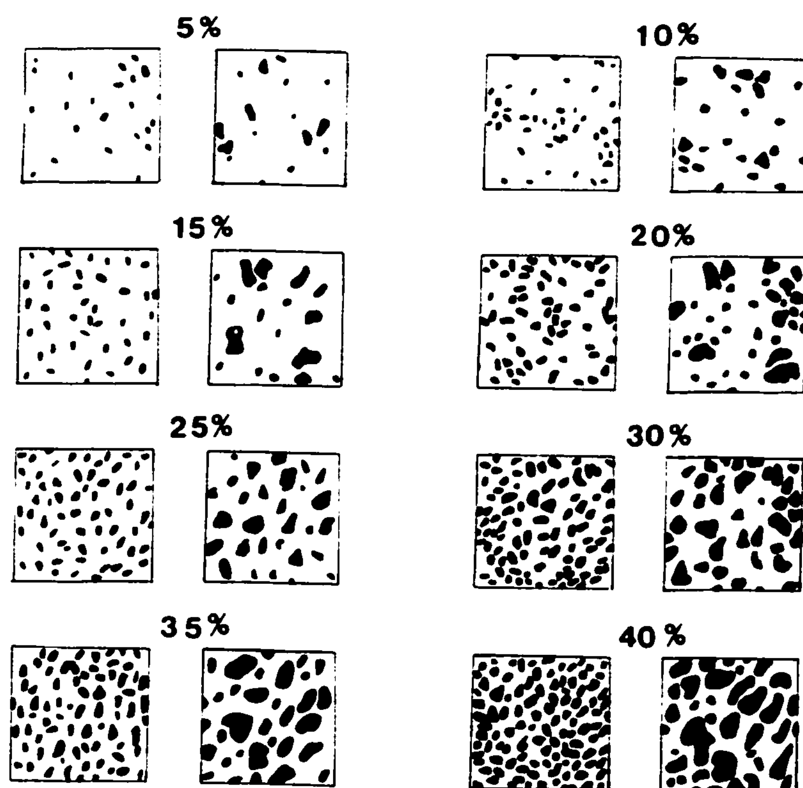


FIGURE 6-5: Inclusion Density Chart (from Sinopoli 1993)

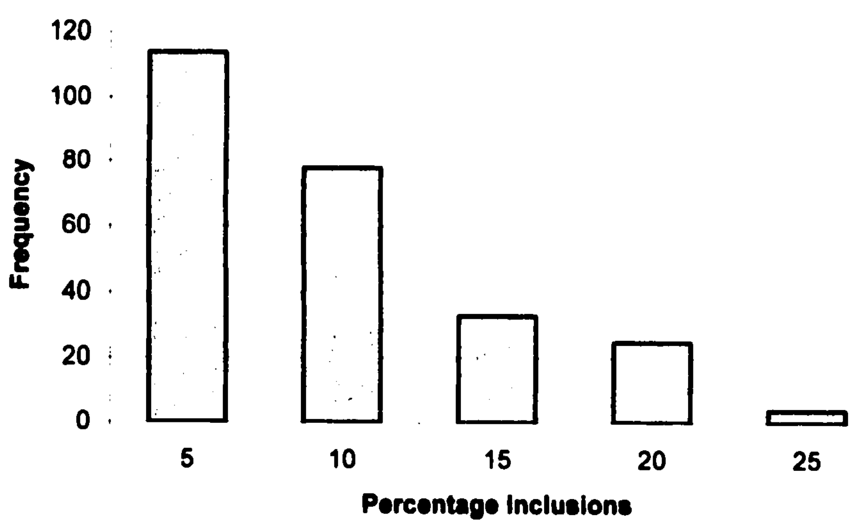


FIGURE 6-6: Frequency Distribution of Inclusion Density for all Rims

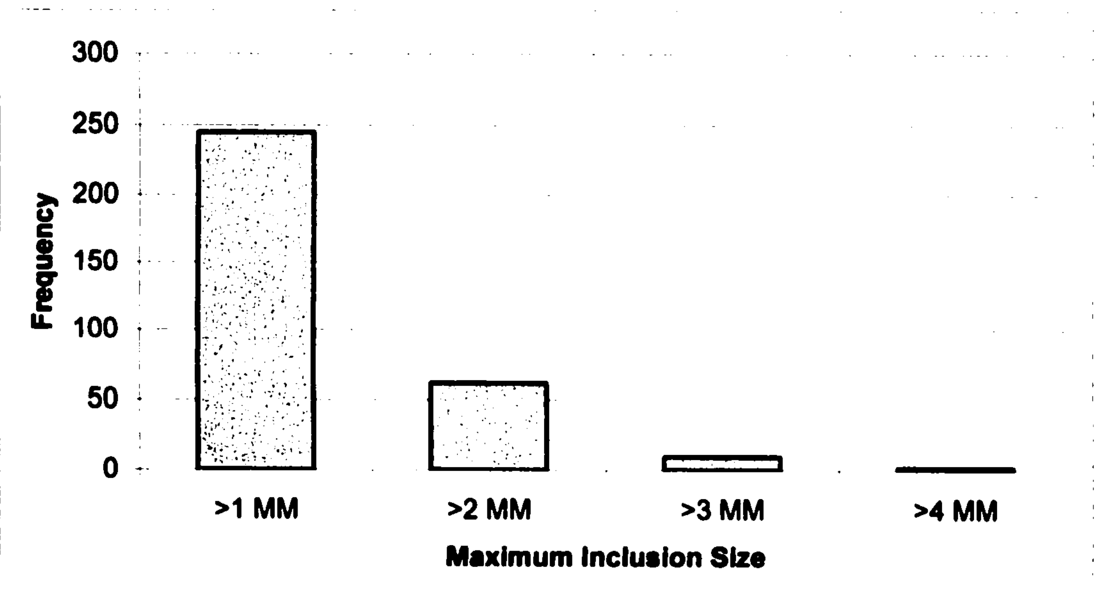


FIGURE 6-7: Frequency Distribution of Maximum Inclusion Size for All Rims

Ceramic Variable Definitions: Restricted and Unrestricted Vessels

For this study, the ceramics were classified according to three principal sets of attributes: rim morphology, rim size, and surface treatment. First, following Sinopoli's classification scheme, rims were examined and categorized, where possible, as being from either restricted of unrestricted vessels. Restricted vessels are those defined as those that narrow below the rim and then turn outward; unrestricted vessels are open vessels that do not narrow below the rim (Sinopoli 1993: 42). This distinction is useful in that unrestricted vessels most often are bowls, dishes, and lamps, while restricted vessels usually represent storage jars, pots, serving vessels, and cooking vessels. Many of the rims recovered during the Palghat survey were not large enough to make this determination always possible, but of those that were, most (n=255) were classified as restricted vessels, and the remainder (n=26) were classified as unrestricted vessels.

Restricted Vessels

Rim Measurements

Quantitative measurements for each rim included lip thickness, rim thickness, rim height, and, where possible, neck thickness, neck height, and rim diameter. The principal measurements taken for the rims were lip thickness, rim thickness, and rim height (in millimeters). Over 90% of the restricted rims had a measured lip thickness of less than 10 millimeters (Figure 6-8). Almost 90% of the rims had a measured rim thickness between 6 and 15 millimeters (Figure 6-9), and just fewer than 80% had rim heights

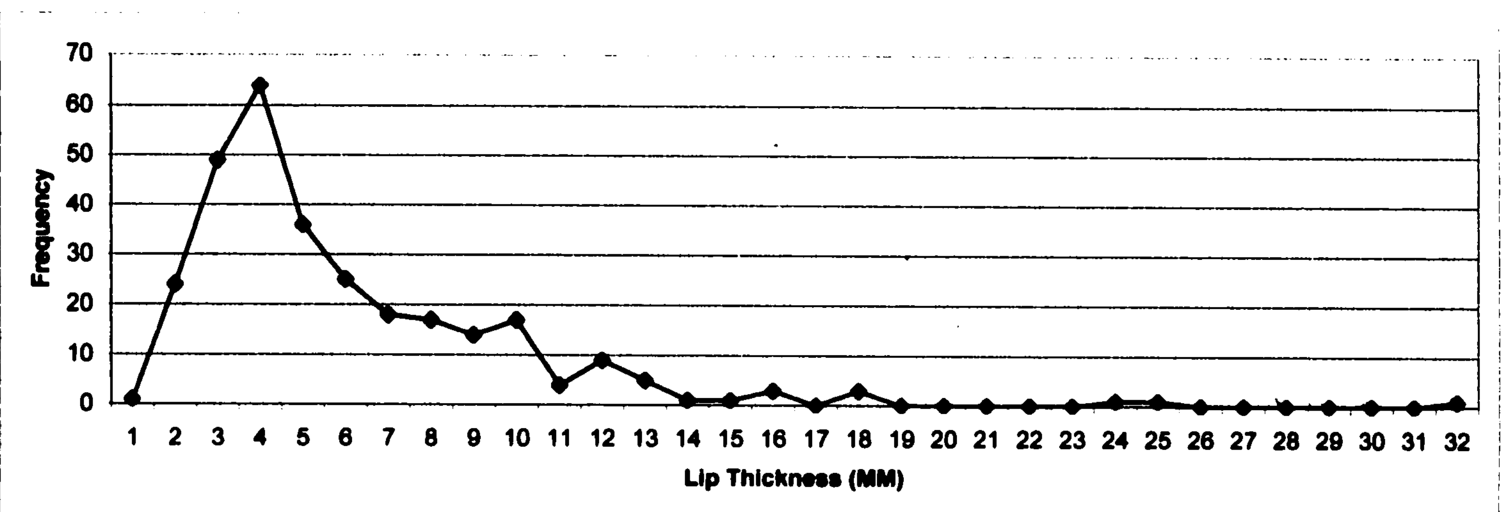


FIGURE 6-8: Frequency Distribution of Lip Thickness for Restricted Rims

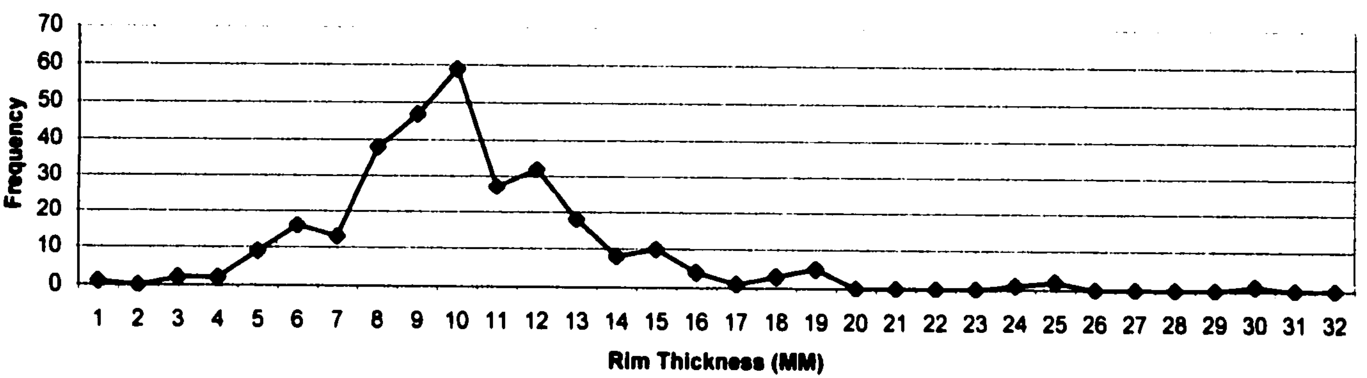


FIGURE 6-9: Frequency Distribution of Rim Thickness for Restricted Rims

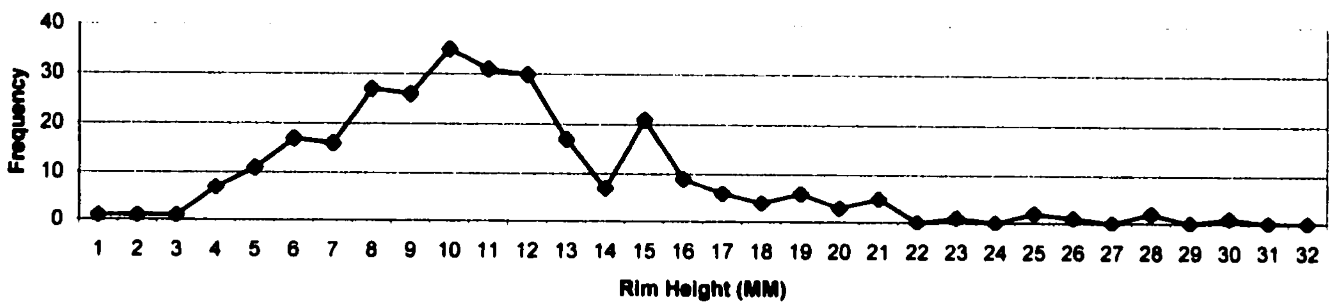


FIGURE 6-10: Frequency Distribution of Rim Height for Restricted Rims

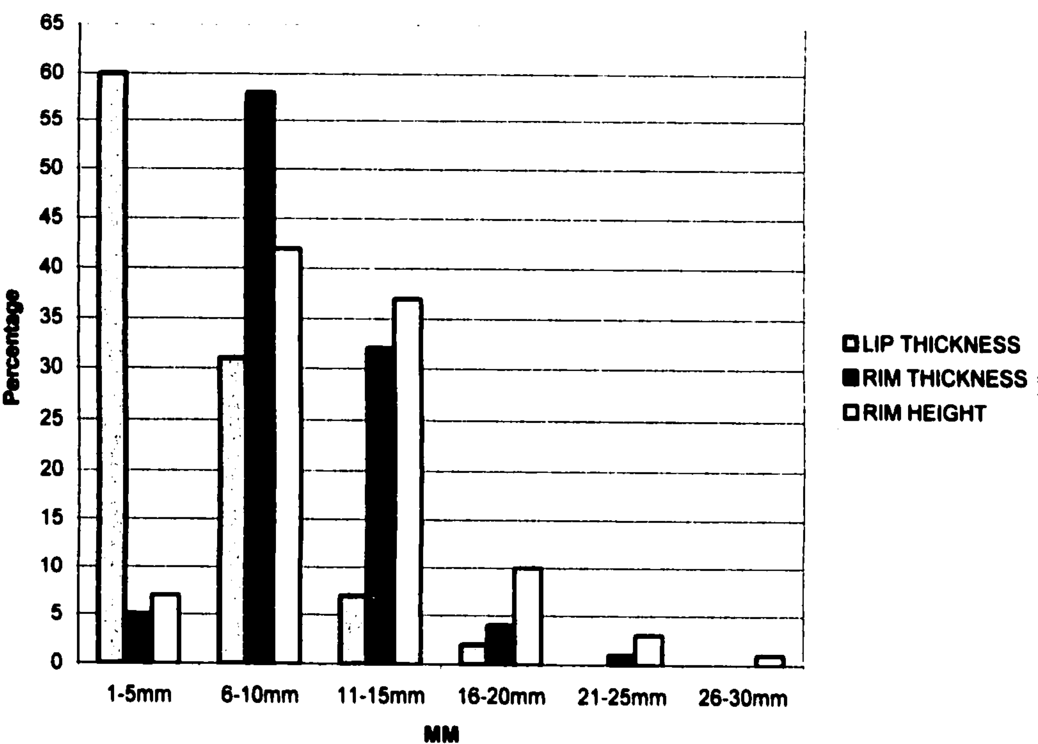


FIGURE 6-11: Relative Size Distribution of Rim Measurements for Restricted Rims

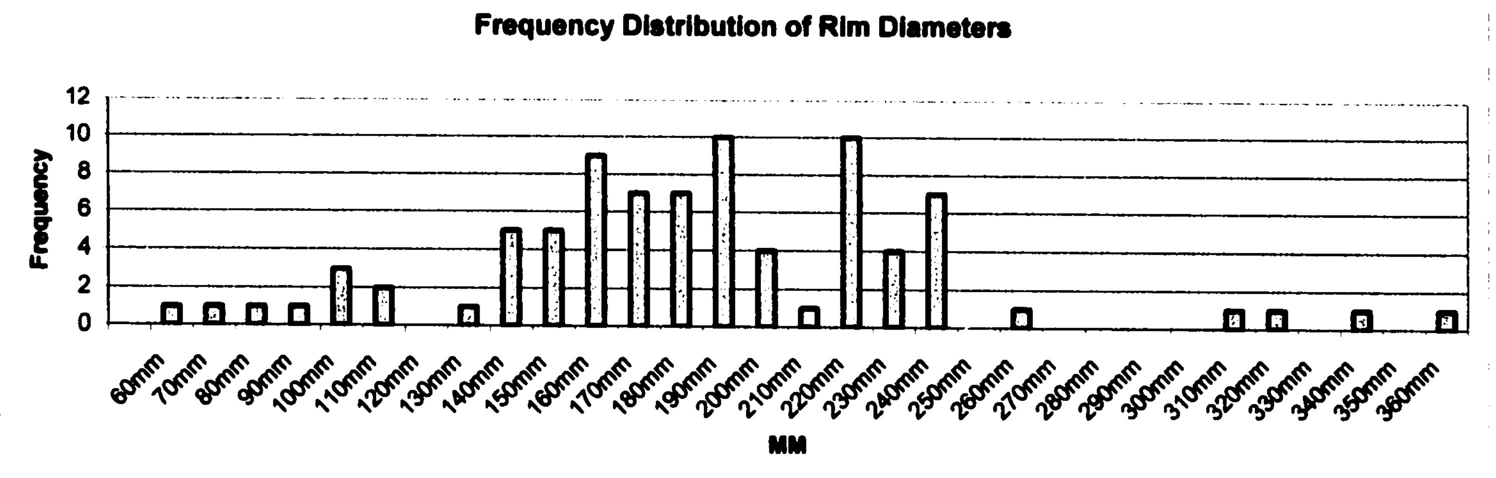


FIGURE 6-12: Frequency Distribution of Rim Diameter for Restricted Rims

between 6 and 15 millimeters (Figure 6-10). Figure 6-11 shows the relative distribution of each measurement type in 5 millimeters categories.

Vessel Size

Again, the small size of most of the rim sherds from the Palghat survey made it difficult to determine overall vessel size, but it was sometimes possible to measure rim diameter and to use this measurement as an indicator of overall vessel dimensions for the restricted vessels. A total of 73 rim sherds from restricted vessels were large enough to be measured for rim diameter (based on the exterior rim). Diameters ranged from 70 to 360 millimeters, with the bulk of the rims falling in the 120 millimeters to 260 millimeters range (Figure 6-12). Within the middle range, the rims could be divided into two categories—those ranging from 120 to 180 millimeters, and those from 190 to 260 millimeters. Using this distribution as a guideline, four broad categories of rim diameter were delineated. Average rim thickness and rim height of all remaining rims were then compared for the various ranges of rim diameters, in order to see if rim size varied in proportion to the overall size of the vessel.

Table 6-4

Average Rim Thickness and Height for Four Categories of Rim Diameter

Rim Diameter	Average Rim Thickness	Average Rim Height
70-110 millimeters (n=4)	8.25 mm	10 mm
120-180 millimeters(n=24)	10.4 mm	11.2 mm
190-260 millimeters (n=32)	11.8 mm	12.2 mm
310-360 millimeters (n=4)	17.6 mm	17.5 mm

As Table 6-4 shows, average rim thickness and average rim height clearly increase with an increase in rim diameter. This cross tabulation provides a provisional guideline for the remaining rims that lack a diameter measurement. Because of the lack of complete vessel profiles or large rim sherds, it is difficult to precisely consider differences in overall vessel size. In this case, therefore, assumptions of vessel size are extrapolated from rim measurements—rim height and rim thickness. Table 6-4 suggests a positive correlation between rim measurements and rim diameter (as one indicator of overall vessel size). Therefore, based on this data and the frequency distribution chart for rim measurements, it was decided to assign two broad size categories—small and large—for all rims. Rims with combined thickness measurements of 11 millimeters or less and height measurements of 12 millimeters or less are generally associated with vessels having a rim diameter between 70 and 180 millimeters, and were considered to fall in the "small" vessel category; those rims with combined thickness measurements greater than 11 millimeters and height measurements greater than 12 millimeters were generally associated with vessels having a rim diameter between 190 and 360 millimeters, and fell into the "large" vessel category. Though broad and somewhat indistinct, this characterization of relative vessel size is useful as one means of postulating vessel function or use for the Palghat Gap assemblage.

Unrestricted Vessels

Rim profiles for selected unrestricted vessels are shown in Figure 6-13. The small number of rims from unrestricted vessels precludes making any quantitative assessments as was done for the restricted vessels; nevertheless, some observations may be noted.

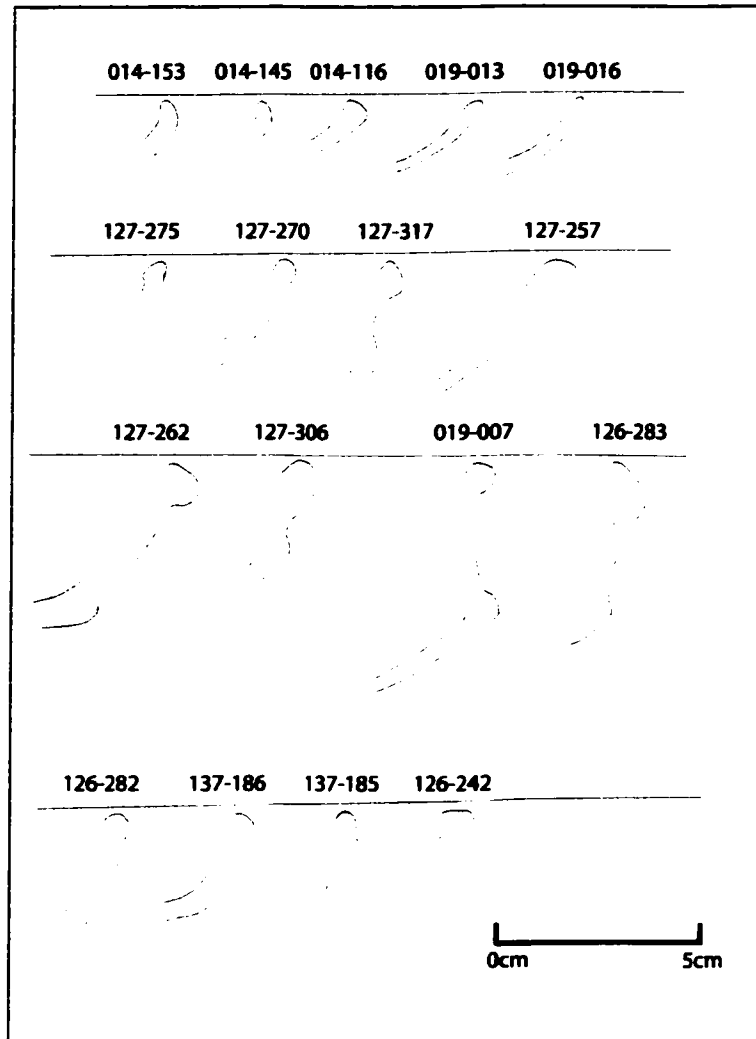


FIGURE 6-13: Rim Profiles of Unrestricted Vessels

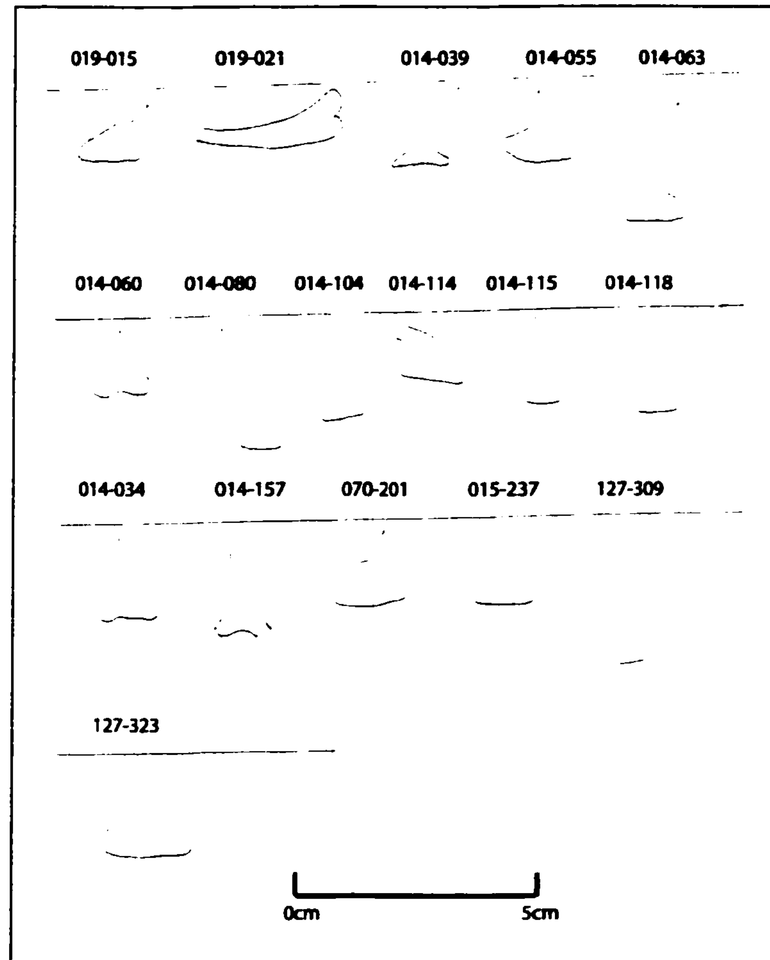


FIGURE 6-14: Profiles of Other Vessel Forms

Vessels appear to fall into two broad categories: vessels with simple rims and vessels with carination. A total of 11 rims from unrestricted vessels were large enough to permit measurement of rim diameter, which ranged from 60 millimeters to 220 millimeters, and are shown in profile in Appendix B.

Other Ceramic Forms

Other common vessel types that have been recovered from South Indian sites are lids and ring stands, and some of the so-called "rims" from the Palghat survey may in fact represent one or the other these ceramic categories. A number of sherds from the Palghat Gap survey have been identified tentatively as pedestal bases or lids. Of the 20 or so sherds that fell into this category (Figure 6-14), 14 were found at Kozhinampara. This may be due in part to the overall high volume of sherds recovered from Kozhinampara, but it should be noted that the PLG-127 assemblage, which had a comparably high sherd count, contained only two pedestal or lid sherds.

Preliminary Ceramic Classification for the Palghat Gap

Because of the small size of most of the rim sherds, the focus of this classification system is on restricted rims, which were subdivided on the basis of rim morphology. The rims lacked major decorative or stylistic elements, and were therefore sorted according to a few overall rim shapes that appeared to dominate the assemblage. Four major rim categories were thus identified for the restricted vessels:

1. Round Rim: External surface of rim is rounded
2. Straight Rim: External surface of rim is straight
3. Ridged Rim: Rim has at least one ridge on external surface
4. Simple Rim: Rim is only slightly thickened, or has no visible features.

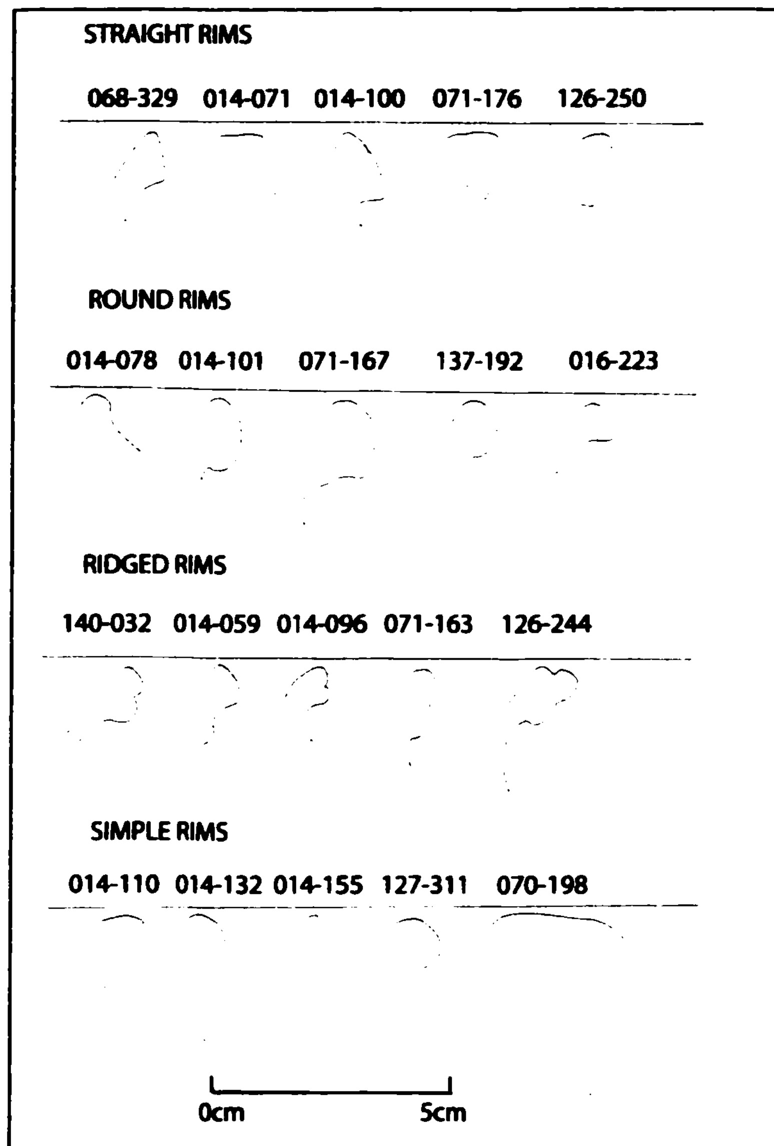


FIGURE 6-15: Profiles of Selected Restricted Rims by Rim Class

The question arises about the potential meaning and value of these rim categories for this study. The rim typology as presented here may indicate variations in function, or it may be a stylistic marker, pointing to different pottery making communities. The typology may simply demonstrate technical choices—that is, differences in the series of steps that are followed in order to manufacture the pottery.[17] It is argued here that, given the preliminary and exploratory nature of this study, and the realization that this is the first attempt to formalize the study of early Tamil ceramics, it may not be useful at this stage to speculate on the interpretation of formal variation. It is of course incumbent on the researcher to be intensely aware of the underlying issues surrounding any attempt to find meaningful patterning in the archaeological record; hence, in the following chapter is a presentation of some methods by which to interpret ceramic variability as it pertains to the Palghat Gap assemblage.

Samples of each rim category are shown in Figure 6-15. Of the four categories, round rims and straight rims were the most numerous, comprising about 38% (n=98) and 36% (n=92) of the all rims, respectively. Ridged rims comprised 13% (n=34) of the total, and simple rims comprised 14% (n=35) of all rims.

[17] For a discussion of how ceramics may be studied by addressing the technological choices made by the potters in the process of production, and this approach integrates with the study of ceramic style, see Stark 1998.

Table 6-5

Range of Rim Thickness and Height Measurements for Each Rim Class

	RIM THICKNESS		RIM HEIGHT	
	Minimum	**Maximum**	**Minimum**	**Maximum**
Round Rim	3 mm	19 mm	4 mm	21 mm
Straight Rim	1 mm	19 mm	4 mm	25 mm
Ridged Rim	7 mm	19 mm	3 mm	30 mm
Simple Rim	4 mm	30 mm	4 mm	21 mm

For rim sizes, both rim height and thickness were considered for each rim class. Rim measurements ranged from one millimeter to 30 millimeters (Table 6-5). Figures 6-16 and 6-17 show the frequency distribution of rim height and thickness for each rim class, and the table above displays the minimum and maximum values for each category. Figures 6-16 and 6-17 show that, except for the simple rims, there are no discrete size-based subcategories within the rim classes. The simple rim class includes four rims that exceed 21 millimeters in thickness and 26 millimeters in height. Rim height and thickness for the majority of rims from each four classes fall within the six to 15 millimeter range.

Rim classes were then examined for their relative distribution in vessel size. First, a comparison of rim classes and rim diameters is shown in Table 6-6. With rim diameter considered here as a measure of relative size, it can be seen that for the Palghat Gap assemblage most rims of all classes fall within the 120 to 260 millimeter range.

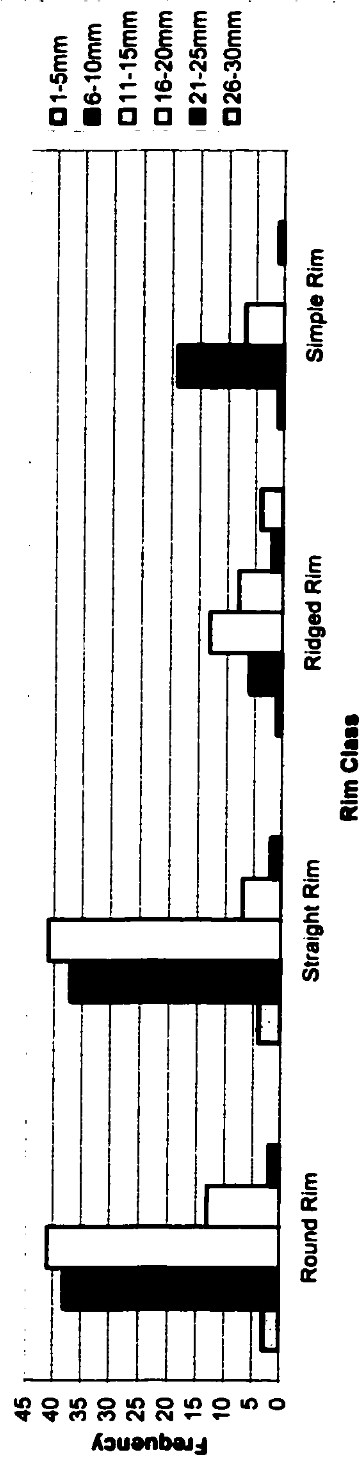


FIGURE 6-16: Frequency Distribution of Rim Height by Rim Class

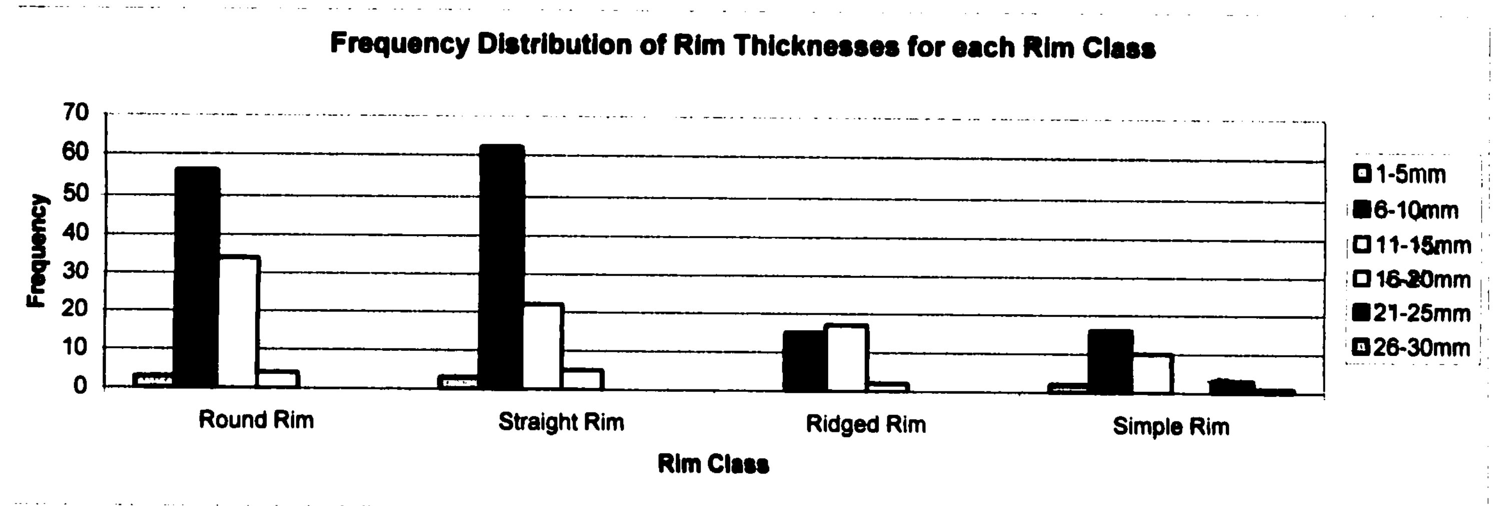


FIGURE 6-17: Frequency Distribution of Rim Thickness by Rim Class

Table 6-6

Cross Tabulation of Restricted Rim Class and Rim Diameters: Restricted Vessels

Rim Class/Diameter	70-110 millimeters	120-180 millimeters	190-260 millimeters	310-360 millimeters
Round Rim	3	11	14	1
Straight Rim	0	8	11	1
Ridged Rim	0	2	5	1
Simple Rim	1	5	2	2

Second, each rim class was divided into two size categories, small and large, based on the criteria described in the previous section. Overall, 140 restricted rims fell in the small vessel category, and 46 rims in the large vessel category. The breakdown of this distribution is shown in Table 6-7. A chi-square analysis of this table shows that this distribution is significant at the 0.01 level. Small vessels in the round rim, straight rim, and simple rim categories occur in much greater quantities than the large vessels in these rim classes. Ridged rim vessels are about evenly distributed in the large and small vessel categories.

Table 6-7

Frequency of Rim Sherds by Rim Class and Relative Vessel Size: Restricted Vessels

Rim Class/Vessel Size	Small	Large
Round Rim	51	19
Straight Rim	58	12
Ridged Rim	12	13
Simple Rim	19	2

Each rim class was then subdivided according to whether the rims had a clear or possible slip treatment on the exterior surface of the rim. Based on slip colors of the exterior surface, three main categories were defined: Black Slipped, Red Slipped, Orange Slipped, and Brown Slipped. Black Slipped rims had a black slip on the exterior surface of the rim. Red Slipped rims include those rims whose exterior slip was classified as Red or Light Red. Orange Slipped rims include those whose slip colors are categorized as Orange, Light Orange, Orange/Brown, Orange/Red, Orange/Gray, and Orange/Black. Brown Slipped rims are those categorized as Light Brown (Buff), Dark Brown, Brown/Red, Brown/Black, and Brown/Gray. The 87 rims from restricted vessels with an exterior slip treatment are tabulated by rim class in Table 6-8. Although the sample size is rather small, it can be seen that round, straight, and simple rims most often carried a red or orange slip. The distribution of slip color for ridged rim vessels is more evenly distributed, with a greater proportion having a black or orange exterior slip color.

Table 6-8

Cross Tabulation of Rim Class and Exterior Slip Treatment: Restricted Rims

Rim Class/Slip Category	Black Slipped	Red Slipped	Orange Slipped	Brown Slipped	Other Slips	TOTAL
Round Rim	4	13	15	4	0	36
Straight Rim	1	8	9	1	2	21
Ridged Rim	7	3	5	1	0	16
Simple Rim	2	4	6	1	1	14
TOTAL	14	28	35	7	3	87

Discussion of Rim Classification Scheme

Chronology and Cultural Affiliation

It is particularly difficult to address the question of chronological categories with regard to the Palghat Gap assemblage. To some extent, this is the result of conducting a large-scale survey in a region where the accumulated data are not understood well enough to allow for fine-tuned temporal analysis. It may be possible to tentatively identify some sherds that may represent later medieval or early modern examples, but this identification is based mostly on the fact that some sherds were much less abraded and better preserved than others. Most published reports from Kerala and Tamil Nadu stop with the Early Historical period, and examples from later periods are extremely difficult to date, or even to identify. Later medieval ceramics are rarely discussed in detail in the literature. Unlike published excavations reports for other regions in South India (e.g. Smith 1997: 236), illustrations of rims forms from Kerala and Tamil Nadu do not therefore have enough information to allow the Palghat assemblage to be temporally subdivided. The overall lack of marked rim variability in the Palghat collection—and the corresponding lack of clear chronologically-defined archetypes in the published records—makes it necessary to temporarily set aside chronological evaluations until more data is available.

Matching rim forms with published exemplars for the purpose of identifying chronological categories is made particularly difficult because the traditional South Indian classification schemes are made on the basis of "type" wares with little attention paid to rim forms. The ceramics discusses in detail in Chapter 3 (e.g., Black and Red

Ware, Russet Coated Painted Ware, Rouletted Ware) are usually identified as Iron Age/Early Historical wares. It was decided here to focus on rim morphology because of the relatively imprecise descriptions of paste and slip colors. However, it is striking that none of the published reports from Kerala and Tamil Nadu report ceramics having an orange paste or orange slip, a category that was prevalent in the Palghat Gap classification scheme (although this may be due to a reliance on descriptive color categories).

Possible Exemplars from Published Reports

In this study, the rims were classified into classes of similar type in order to examine possible functional and chronological categories. The drawn rim forms were matched with published exemplars from other sites in Kerala and Tamil Nadu based on morphological similarity. As already noted, most published reports of ceramic assemblages are too imprecise to allow a meaningful discussion, but some, such as those by Wheeler and Begley for Arikamedu, may provide some exemplars.

Round Rims

The nearest excavated site to the Palghat Gap is Kodumanal in Coimbatore District, Tamil Nadu. The published reports by Rajan from this site employ the traditional South Indian ceramic classification schemes, (Black and Red Ware, Russet Coated Painted Ware, Red Ware, Red Polished Ware, and Black Polished Ware) but do not have detailed descriptions of rim morphology (Rajan 1994: 77-80). The drawn pottery from this site does include some exemplars that may relate to the pottery from the

Palghat Gap; for example, the drawings of red ware types have some rims that appear to be rounded (Rajan 1994: Figure 17, nos. 2, 3, 16, and 26).

Better examples can be seen from the pottery of the megalithic burial site Mangadu in Kerala (Satyamurthy 1992: Figure 1, no. 1; Figure 3, nos. 2, 6, 8; Figure 4, nos. 3,5,10). The profiles from Mangadu are from handmade red ware urns ranging 70 to 90 millimeters in height and 40 to 70 millimeters in diameter. The Mangadu urns are reported to have a brown core and a crackle surface (Satyamurthy 1992: 16).

Straight Rims

The closest parallels to the straight rim forms from the Palghat Gap survey are Red Slipped Ware everted vessels from Uraiyur (Raman 1988: 51, Figure 16, nos. 1-4). Because the sherds are printed at quarter scale, it is not possible to assess accurately the similarity with the Palghat Gap rims. One rim from Kodumanal appears to correspond to the Palghat straight rim form (Rajan 1994: Figure 17, no.12), as does one from Mangadu (Satyamurthy 1992: Figure 5, no. 12).

Ridged Rims

The ridged rim forms, although the most complex of all rim forms from the survey, were the most difficult ones to match from published reports of Iron Age and Early Historical excavations from Kerala and Tamil Nadu. It is possible that these represent later medieval forms, although a few examples from Kodumanal may be correspond to ridged rim forms (Rajan 1994: Figure 17, nos. 18-21).

Simple Rims

Some of the closest exemplars of simple rim forms come from the Kerala megalithic sites of Machad and Pazhayannur (Mehta and George 1978). Here the simple rims are not necked vessels, but rather small bowls with sagger bases (Mehta and George 1978: Figure 4, nos. 1-10). Other exemplars come from Arikamedu (Begley 1996: 174-79, Figures 4.112-4.129; Wheeler et al. 1946: 58, Figures 11-11f), but are generally associated with bowls and dishes. Necked or restricted vessels with simple rims are not described from Arikamedu.

Further Observations

With regard to the Palghat Gap rims, it may be that the four rim classes serve as evidence of stylistic distinction rather than a clear-cut functional distinction. For functional identification, it may be better to consider relative overall vessel size, as far as possible. Vessels that fall into the large vessel category in this study are more likely to function as storage vessels; those that are classified as small probably functioned as serving vessels. Such a functional distinction makes sense of course only in contexts where these vessels were used as storage or serving items, such as settlements. At mortuary sites, where the function of the pottery is likely more symbolic, this distinction is less useful.

The ceramic classification scheme outlined in this chapter has been designed to serve as the foundation for the detailed ceramic analysis presented in Chapter 7. The

Palghat Gap pottery will be considered in association with the megalith and settlement data to identify variabilities within and among the sites from the Palghat Gap.

CHAPTER 7

EVALUATING MATERIAL AND SOCIAL BOUNDARIES IN THE PALGHAT GAP

Introduction

In the archaeological and anthropological record, "complexity" always involves the delineation of at least two levels or degrees of distinction within the society. In the broadest sense, a "complex society" incorporates empires, states, and chiefdoms—all hierarchically organized polities (Stein 1998: 1). Nelson cites a number of characteristics for social systems to be considered complex: they must be "comparatively large demographically and spatially, encompass multiple settlements in an integrated political structure, and exhibit horizontal and vertical differentiation. Other properties associated with complexity are hereditary ranking, production of surplus and its appropriation by an elite, craft specialization, and long-distance exchange" (Nelson 1995: 598). Nelson simplifies the analysis by asserting that archaeologists generally consider two major properties in their assessment of complexity: scale and hierarchy (Nelson 1995: 599). Briefly, scale encompasses the demographic and geographic size of the polity, as well as the amount of population that could be coordinated to undertake monument construction. Hierarchy refers to the extent to which power is concentrated in the hands of a few people—the degree to which an elite can control its subjects, for example, to enhance military capabilities or exact tribute. Despite the growing recognition that the analytical units and structural dynamics of complex societies are based on culturally unique configurations and historically unique processes (Stein 1998: 27), the crux of

archaeological research still lies in the ability to connect artifact patterns with social patterns (Gosselain 2000: 188). Whether society is structured vertically or horizontally or both, the archaeological dilemma still rests in identifying these social boundaries through the use of material culture. The abstract concept of complexity, as Adams observed, does not "emerge raw from the archaeological data"; it grows instead "by trial and error" (Adams 2001: 346). The question then becomes whether the patterning in material culture is a signal of levels of past distinction or identity. The findings of this study will demonstrate that the distributions of megaliths and ceramics in the Palghat Gap do appear to correlate with social differentiation in early Tamil society. Moreover, the evidence of differentiation is linked to document-based depictions of Tamil society, but not, however, to the traditional chief/king-based configurations.

The link between social boundaries and material culture is undeniably complex; the very concept of "social boundaries" and its anthropological and archaeological application are still being debated within the scholarly community (e.g., Hegmon 1998). Stark reminds us that the study of social boundaries is of necessity a perennial concern for archaeologists—whatever the specific medium of material culture or the particular past that is being studied, a major goal in the study of formal variation across space is "to identify social groups, whose boundaries are marked by distinctive patterns in the archaeological record" (Stark 1998:1). She summarizes the quest in terms of a few questions (Stark 1998: 8):

1. Can social boundaries be identified in the archaeological record?
2. If such boundaries exist, what methods can we use to examine them in the material record?
3. What social processes and what kinds of social groups can we discern by studying discontinuities in the archaeological record?

Although material culture often plays an active role in social interaction, especially in the expression of social status and identity, it is not easy to articulate a straightforward relationship between artifact and identity (Janusek 2002: 37). It has been argued that, rather than relying on a single category of material culture, the researcher employ a careful, multivariate approach to interpret past identity and interpret the links between material data and past social processes (e.g., Janusek 2002; Dietler and Herbich 1998). The goal of this study, therefore, has been structured around the analysis of two bodies of material data—megaliths and ceramics—in conjunction with the analysis of historical documents related to the period.

Site Patterns and Ceramic Distributions in the Palghat Gap

In this chapter, correlations between settlement and ceramic data will be examined in order to uncover patterns that may offer insights into the nature and construction of complex organization in the Palghat Gap. The site distribution is somewhat hampered by the fact that the vast majority of sites discovered in the Palghat Gap are megaliths or megalith clusters, with a comparative paucity of clearly identifiable settlements or activity areas. Nevertheless, there may be indications about how early Tamilakam was structured in the study of the comparative size, location, and configuration of megalithic sites. In addition, the classification of sherds from the Palghat Gap survey is preliminary, but it has the advantage of being based on intrinsic quantitative and qualitative criteria and of being independent of previous pottery classifications from Tamilakam. The focus of this section is on the ways in which the

typological scheme outlined in Chapter 6 may be used to shed light on the sites described in Chapter 5.

In order to evaluate the site patterns in the Palghat Gap, several features were considered: the relative size of the sites; the distribution of the sites throughout the region; and the particular nature and configuration of megaliths within the larger complexes. To evaluate ceramic variability using the Palghat Gap collection, attention was directed toward the rim classification and how this scheme played out within and between various sites. A three-pronged analysis of mortuary and ceramic data based on geography and site variability was formulated for this study. Three separate distributions of megaliths and ceramics were contrasted: 1) comparison of data from the two main megalithic complexes, Pallassena and Pallatteri, and other larger megalith clusters; 2) comparison of data from the probable settlement site, Kozhinampara, with those from site PLG-127 (another possible settlement) and the megalithic sites; and 3) comparison of data from the sites associated with the northern Bharatapuzha River track against the sites associated with the southern Gayatripuzha River track. The analysis will focus on rim class, vessel size, and surface treatment.

Intra-Site Variability: Comparison of Data from Mortuary Sites

Megalithic Type Variation Within and Among Large Complexes

Table 7-1 condenses the information regarding quantity and proportion of megalith types within the four largest complexes encountered in the Palghat Gap: Pallatteri, Pallassena, Elavancheri, and Konnampara. Except for Elavancheri, all these complexes contain 49 to 52 separate burial units. Although only six megalithic types

characterize all these sites, one finds a degree of inter-site variability in megalith type distribution. Urn burials, for example, although encountered regularly at the smaller megalithic sites, are by far most numerous at Pallatteri and Konnampara. Similarly, capstones occur in greatest proportion at Konnampara.

Table 7-1

Relative Distribution of Megalith Type for the Four Largest Sites in the Palghat Gap

Site	Slab Cists	Urn Burials	Cap Stones	Stone Circles	Stone Circles w/ Slab Cist	Jar Burials	Total
Pallatteri (PLG-019-072)	26 (50%)	24 (46%)	0	1 (2%)	0	1 (2%)	52 (100%)
Pallassena (PLG-073-126)	33 (64%)	8 (15%)	6 (11%)	2 (4%)	3 (6%)	0	53 (100%)
Elavancheri (PLG-130)	4 (29%)	0	0	6 (42%)	4 (29%)	0	14 (100%)
Konnampara (PLG-145)	39 (80%)	0	10 (20%)	0	0	0	49 (100%)

Discussion of the type variability within megalithic complexes will be confined in this study to the sites of Pallatteri and Pallassena, the two largest and most fully recorded sites of the survey, with occasionally references to the site of Konnampara. Again, any analysis of intra-site variability must take into the account the unknown but no doubt numerous megalithic structures that have been destroyed, submerged, or degraded over centuries of intense land use and reuse. Also, presumably at least some measure of intra-site variability must be the result of megalith construction over long periods of time, but because of lack of chronological control, discussion of temporal variability is, for the moment, virtually impossible at these sites. Of all the megalith types described in

Chapter 3, only a handful was characteristic of the megalithic sites in the Palghat Gap. Most predominant were slab cists, followed by urn burials. Capstones were relatively uncommon, as were stone circles (with or without slab cists), and only one jar burial was found. At Pallatteri, the megaliths were nearly equally divided into slab cists and urn burials (26 of the former and 24 of the latter altogether). At Pallassena, slab cists dominated (33 in number, 54% of total). At Elavancheri, 80% of the units were slab cists; the remaining 20% were capstones. Two features, however, are worth describing in further detail—the "miniature burials" from Pallatteri and the single outcrop megaliths from Pallassena and Nalancheri (and, possibly, Elavancheri).

The series of some small urn burials, slab cists, and jar burials from the Pallatteri complex, which were 50% smaller than all other megaliths in the survey region, are an intriguing indication of intra-site variability. Their size and the fact that they were grouped separately from the rest of the cluster suggest that this sub-cluster represent a consciousness of distinction on the part of the local community. Without excavations, however, it is difficult to know whether difference in size and location are material correlates for symbolic burials, partial interments, or infant/child burials.

The placement of single megalith atop an outcrop at the sites of Pallassena and Nalancheri (and Elavancheri) is another example of intra-site megalith differentiation. At Pallassena, the megalith was a stone circle enclosing a slab cist; at Nalancheri, it was a slab cist. While it is possible that more megaliths were located along the slopes of Nalancheri Hill (identification was difficult because of poor preservation), the slopes of the Pallassena outcrop were devoid of features. The outcrop megaliths were generally in a much better state of preservation than those at the base, but this is likely due to their

location in a relatively less populated and trafficked section of the terrain. Again, like the "miniature" megaliths of Pallatteri, this configuration seems to imply some sense of distinction, and the first, most obvious conclusion is that these isolated megaliths belong to a segment of the community with a higher or special social status.

Ceramic Patterns for Pallatteri and Pallassena

Rim sherds considered here include those from sites associated with the megalithic complex at Pallatteri—PLG-019, PLG-067, PLG-068, PLG-070, and PLG-071—and those associated with the megalithic complex of Pallassena—PLG-126, PLG-127, and PLG-129. As the principal mortuary complexes situated in the Palghat Gap with the greatest megalith densities, it will be instructive to compare the ceramic assemblages to search for variations—or similarities—in patterning.

Table 7-2 shows that the overwhelming majority of sherds from both megalithic sites have paste colors that were in the orange and brown ranges, which is consistent with the Palghat ceramic sample as a whole. A chi-square analysis of this table shows the distribution to be significant at the 0.01 level. However, a greater proportion of the sherds from Pallassena fall in the orange color range, while slightly more from Pallatteri fall in the brown color range. This variation suggests a difference in composition of clay sources in the vicinity of each site and hence points to the local production and consumption of ceramics.

Table 7-2

Frequency of Paste Colors: Pallassena and Pallatteri

#/%	Black	Red	Orange	Brown	Other
Pallatteri (n=75)	5 (7%)	0 (0%)	22 (29%)	47 (63%)	1 (1%)
Pallassena (n=120)	2 (2%)	1 (1%)	62 (52%)	51 (42%)	4 (3%)

Figures 7-1 and 7-2 show that there is almost no difference in relative distributions of inclusion density and inclusion size between each complex. Pallassena has a slightly higher percentage of sherds with 15% inclusions, but otherwise the patterning is almost identical, and in fact mirrors the distribution for the Palghat assemblage as a whole.

Relatively few rims from each complex were large enough to calculate rim diameter (Pallatteri: n=20; Pallassena: n=31). The differences shown in Figure 7-3 are not statistically significant, but it is worth noting that although Pallatteri has overall fewer rim diameter measurements, a much larger proportion of them fall within the 220 to 240 millimeter range.

Table 7-3

Frequency of Rim Class: Pallatteri and Pallassena

# (%)	Round Rim	Straight Rim	Ridged Rim	Simple Rim
Pallatteri	30 (54%)	13 (24%)	7 (13%)	5 (9%)
Pallassena	24 (37%)	24 (37%)	13 (17%)	4 (9%)

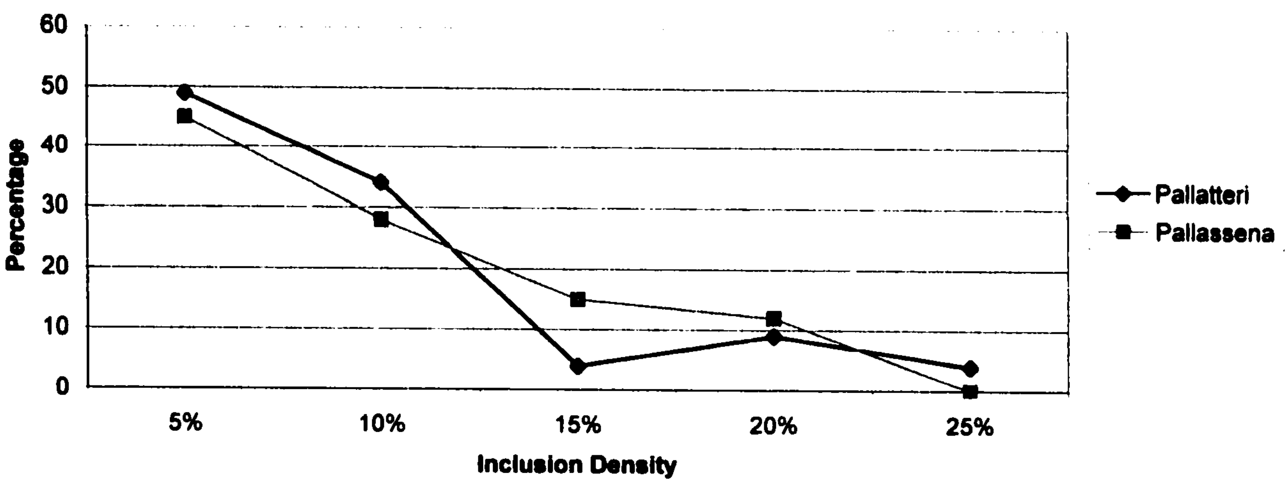


FIGURE 7-1: Pallassena and Pallatteri: Comparison of Inclusion Densities

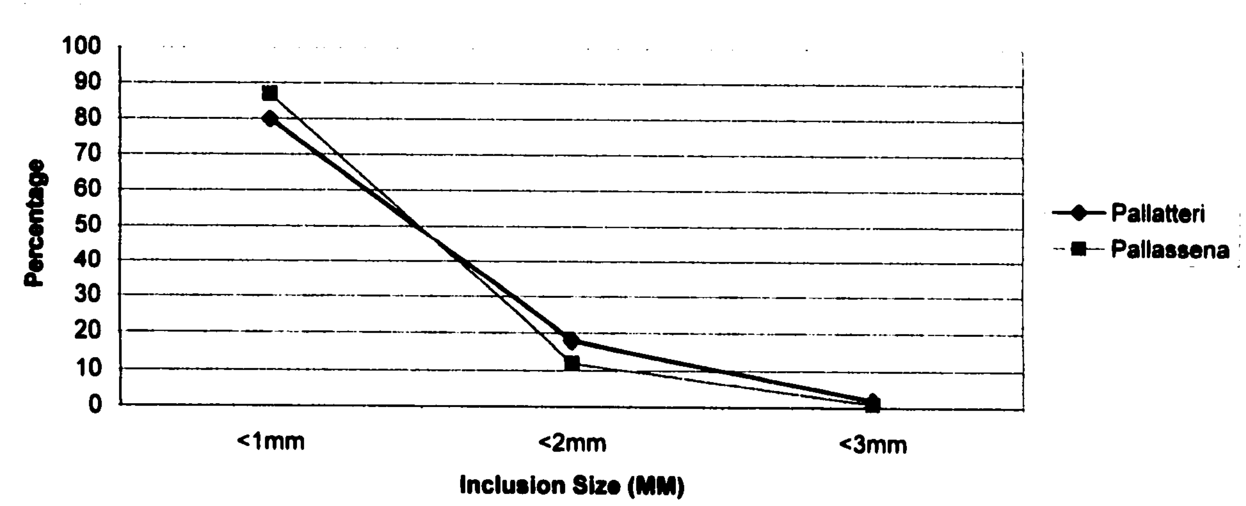


FIGURE 7-2: Pallassena and Pallatteri: Comparison of Maximum Inclusion Size

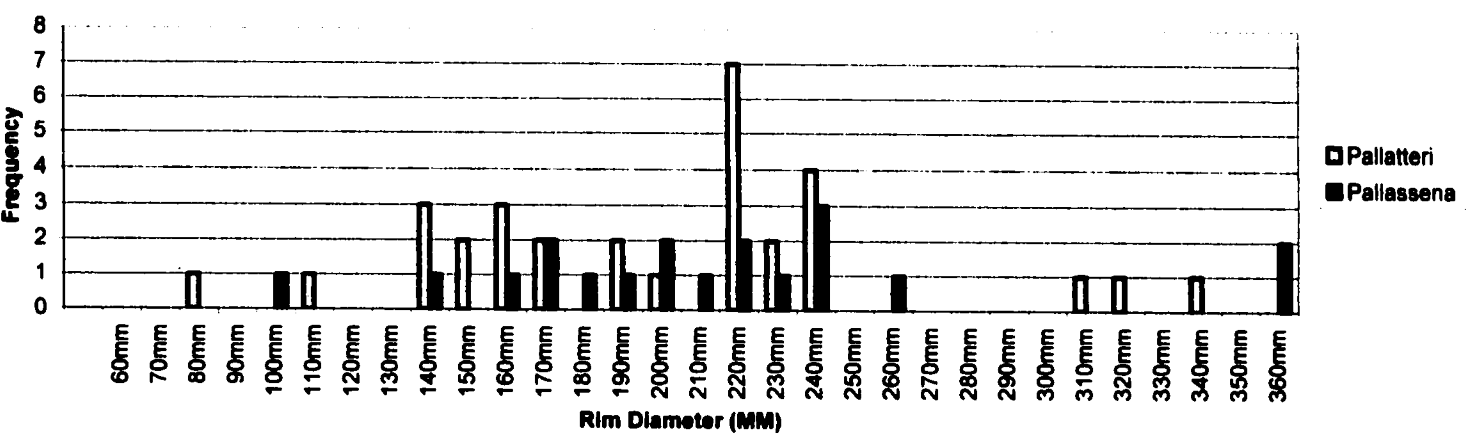


FIGURE 7-3: Pallassena and Pallatteri: Comparison of Rim Diameter Distribution for Restricted Rims

The data distribution in Table 7-3 suggests that relatively little distinction lies between the two megalith complexes based on rim class. Again, the sample size is rather small, and the distribution is not statistically significant, but distributions indicate that simple rims are similarly dispersed within both sites. Pallatteri has a higher proportion of round rims, while Pallassena has a slightly larger proportion of straight and ridged rims.

To get an idea of comparative vessel size for each rim class within each megalithic complex, the range of available rim diameters are noted, as well as the average rim diameter in Table 7-4.

Table 7-4

Range of Rim Diameters per Rim Class: Pallatteri and Pallassena

# of Rims/ Diameter Range/%	Round Rim	Straight Rim	Ridged Rim	Simple Rim
Pallatteri (n=20)	8/100-230mm (47%)	5/210-360mm (29%)	2/190-260mm (12%)	2/240-360mm (12%)
Pallassena (n=31)	12/80-320mm (44%)	9/140-210mm (33%)	4/220-310mm (15%)	2/140-340mm (8%)

As described in the previous section, each rim class was subdivided into two size categories, small (rim diameters in the 70-180 mm range) and large (rim diameter in the 190-360 mm range), using the rim thickness and rim height measurements, order to get a better understanding of size variation. The frequencies for Pallatteri and Pallassena are shown in Table 7-5.

Table 7-5

Frequency of Large (190-360 mm) and Small (70-180 mm) Rims per Rim Class: Pallassena and Pallatteri

# Of Rims/%	Round Rim: Small	Round Rim: Large	Straight Rim: Small	Straight Rim: Large	Ridged Rim: Small	Ridged Rim: Large	Simple Rim: Small	Simpl e Rim: Large
Pallatteri	12 (35%)	6 (18%)	4 (11%)	6 (18%)	0	5 (15%)	0	1 (3%)
Pallassena	11 (25%)	6 (14%)	14 (32%)	2 (5%)	7 (16%)	3 (6%)	0	1 (2%)

For round rims vessels, both megalithic complexes about twice as many vessels that fall into the small vessel category compared to the large vessel category. For straight rim vessels, Pallatteri is roughly evenly divided between small and large vessels. Pallassena, however, has a significantly higher number of small straight rim vessels than large straight rim vessels. The complexes also differ in the ridged rim category: Pallatteri has only large ridged rim vessels, and Pallassena has over twice as many small ridged rim vessels. The quantities of simple rim vessels are too small to consider here.

About 40% of all rim sherds from each complex had some identifiable exterior surface treatment. In the distribution shown in Table 7-6, red slipped sherds predominate at Pallatteri, while orange slipped sherds form the greatest proportion at Pallassena. A chi-square analysis of the table shows the distribution to be significant at the 0.01 level.

Table 7-6

Frequency of Exterior Slip Colors: Pallatteri and Pallassena

# (%)	Black Slip	Red Slip	Orange Slip	Brown Slip	Other	TOTAL
Pallatteri	6 (17%)	19 (54%)	8 (23%)	2 (6%)	0 (0%)	35 (100%)
Pallassena	8 (20%)	8 (20%)	18 (45%)	0 (0%)	6 (15%)	40 (100%)

If they are indeed associated with separate settlements (or settlement clusters) within the Palghat Gap, the slight distinction in rim class proportions for Pallatteri and Pallassena may indicate a stylistic or sub regional difference. The same argument may apply for the differences in predominant slip color for each of the two sites. It would have been ideal if more sherds had been larger in order to better evaluate size and function. On the other hand, there is an apparent tendency for both mortuary complexes to have many large vessels may be associated with the mortuary nature of both sites.[18]

Inter-Site Variability: Comparison of Mortuary and Non-Mortuary Sites

Location, Size, and Nature of Settlements

In this study, places are termed "settlements" when a site—generally a dense sherd scatter—has no clear association with any megalithic formations. Four sites corresponded to this definition: the Western Ghat outcrop (PLG-008), Nallepalli *agraham* (PLG-015), Chitturpuzha river temple site (PlG-016), and Kozhinampara (PLG-

[18] It should be noted that this is in contradiction to Rajan's (1994: 80) postulation that mortuary sites at Kodumanal tend to lack storage jars and large pots, which would have served no purpose in the burials (besides being unwieldy). Rajan does not specify what he means by "storage jars" and "large pots", however, and it may be that he is referring only to oversize vessels whose rims exceed 360 mm in diameter, which were rare in the Palghat corpus. Furthermore, Rajan does not seem to have taken into account burial urns, which comprise some of the largest ceramic vessels in South India.

014). Of these sites, only Kozhinampara presented a large enough sample of sherds to permit ceramic comparisons; a discussion of variability for the remaining sites, then, must depend on their location, size, and configuration.

The Nallepalli *agraham* and Kozhinampara sites were by far the largest possible settlement sites, measuring 150 by 12 meters and 140 by 30 meters, respectively. The Chitturpuzha river site measured 25 by 15 meters, and the Western Ghat outcrop was the smallest, measuring 4.1 by 2.5 meters. Of these four sites, all but one were located within the plains of the Palghat Gap. The Western Ghat outcrop is the only site from the survey that was situated along the lower slopes of the Ghat Mountains.

Ceramic Variability between Mortuary and Non-Mortuary Sites

The identification of habitation sites in the Palghat Gap is made difficult by the lack of clear criteria associated with different site types in Tamilakam. There were no architectural features that might have identified a site as one other than a mortuary site. Only one significant site in the course of the survey had no association with a mortuary site— Kozhinampara. Even in the absence of other markers, the density of sherds on the surface of the Kozhinampara site is a strong indication that it functioned as a settlement in the past.

A second possible site settlement is associated with the Pallassena complex— PLG-127. It is located within the larger vicinity of the Pallassena megalithic complex, but at some distance from the bulk of the megaliths themselves. The concentration and density of sherds at this site was much higher than for other sites associated with the Pallassena complex (i.e., PLG-126 and PLG-129), and it was thought that PLG-127

represented a settlement, or at least something other than just an extension of the Pallassena mortuary assemblage. On the other hand, given its proximity to the megalithic complex, there was a possibility that this sherd scatter represented a secondary deposition, that is, a byproduct of land clearing activities by the local villagers. To gauge the function and activity of PLG-127, it was decided to compare the ceramic assemblage from the site with an assemblage that was associated with Palghat megaliths, on the one hand, and with an assemblage associated with a Palghat settlement. The ceramics from the PLG-127 site were therefore compared to those from Pallatteri and with those from Kozhinampara.

The frequency and proportion of rim classes were broken down for Kozhnampara, Pallatteri, and PLG-127, as shown Table 7-7. Because of the small number of sherds, in this case the percentage numbers are a more useful index for comparing the two complexes.

Table 7-7

Frequency of Rim Class: Kozhinampara, Pallatteri, and PLG-127

# (%)	**Round Rim**	**Straight Rim**	**Ridged Rim**	**Simple Rim**
Kozhinampara	30 (29%)	44 (42%)	11 (11%)	19 (18%)
Pallatteri	29 (54%)	13 (24%)	7 (13%)	5 (9%)
PLG-127	17 (32%)	22 (41%)	11 (20%)	4 (7%)

The percentage distribution of rims classes for the three sites from the table above show varying degrees of similarity depending on rim class. A chi-square analysis of this

frequency distribution is significant at the 0.025 level[19]. In the round rim and straight rim classes, Kozhinampara and PLG-127 have similar proportions compared to Pallatteri. For ridged rims, there is greater similarity in percentages between Kozhinampara and Pallatteri, and for simple rims, Pallatteri and PLG-127 are more similar.

The range of rim diameters for each rim class was considered in relation to the three sites as well (Table 7-8).

Table 7-8

Range of Rim Diameters per Rim Class: Kozhinampara, Pallatteri, and PLG-127

# Of Rims/ Diameter Range/%	Round Rim	Straight Rim	Ridged Rim	Simple Rim
Kozhinampara (n=19)	6/150-230mm (32%)	7/140-190mm (37%)	1/160mm (5%)	5/110-190mm (26%)
Pallatteri (n=20)	8/100-230mm (46%)	5/210-360mm (30%)	2/190-260mm (12%)	2/240-360mm (12%)
PLG-127 (n=21)	9/80-320mm (43%)	8/140-240mm (37%)	2/220-310mm (10%)	2/140-340mm (10%)

Again, for this section of the analysis, each rim class was subdivided into two size categories, small and large, using the rim thickness and rim height measurement in order to get a better understanding of size variation. The frequencies for the three sites are shown in Table 7-9. The chi-square analysis of this table shows the distribution to be significant at the 0.05 level.

[19] A chi-square test of less than .05 is a conventionally accepted threshold of statistical significance; values of less than .05 are referred to as "statistically significant"—in other words, one can be confident in rejecting the possibility that no association exists between the dependent and independent variables.

Table 7-9

Frequency of Large and Small Rims per Rim Class: Kozhinampara, Pallatteri, and PLG-127

# Rims/ %	Round Rim: Small	Round Rim: Large	Straight Rim: Small	Straight Rim: Large	Ridged Rim: Small	Ridged Rim: Large	Simple Rim: Small	Simple Rim: Large
Kozhin-ampara	18 (21%)	6 (7%)	36 (42%)	2 (2%)	4 (5%)	4 (5%)	16 (18%)	0
Palla-tteri	12 (35%)	6 (18%)	4 (11%)	6 (18%)	0	5 (15%)	0	1 (3%)
PLG-127	7 (19%)	5 (14%)	13 (35%)	2 (5%)	7 (19%)	2 (5%)	0	1 (3%)

A preliminary examination of the table above shows that Kozhinampara and PLG-127 both clearly have a greater number of small vessels than large vessels in the straight rim class. Pallatteri, on the other hand, is different in that it has a greater number of large rims in the straight, ridged, and simple rim classes. It may be suggested that large vessels are more likely to be associated with mortuary sites, in which case Kozhinampara can be identified as a settlement. The small vessels in this study may be associated with a utilitarian function, such as serving, or a symbolic function, such as ritual.

Table 7-10 shows the frequency of exterior slip colors for the three sites being compared. Unfortunately, the frequency of this variable is of less use in determining the nature of PLG-127, since over 80% of the rim sherds recovered from Kozhinampara had no slip (compared to Pallatteri and PLG-127, where at least 50% of the rims contained

some traces of slip)[20]. However, the relative predominance of orange-slipped sherds at both Kozhinampara and PLG-127 supports the conjecture that PLG-127 functioned as a settlement.

Table 7-10

Frequency of Exterior Slip Colors: Kozhinampara, Pallatteri, and PLG-127

# (%)	Black Slip	Red Slip	Orange Slip	Brown Slip	Other	TOTAL
Kozhinampara	1	1	4	0	0	6
Pallatteri	6	19	8	2	0	35
PLG-127	4	5	12	2	0	23

Most megalithic burial sites in Tamilakam are not clearly associated with habitation sites, and very few reports discuss the variations in the ceramic corpus of the two site types. Rajan (1994), however, has made some observations based on his excavations at Kodumanal. First, he points out that the ceramics from megaliths and habitations at Kodumanal are almost identical in terms of technique and shape (Rajan 1994: 80). He does record a few exceptions: large storage jars and big pots are more often found at habitation sites, and four-legged jars, long-stemmed lids, and ring stands tend to be found more often in burial contexts (Rajan 1994: 80-81). Rajan also notes that a thin variety of Black and Red Ware is more common in burials that is the thick variety (although definitions of "thin" and "thick" is not provided).

[20] It is assumed here that the lack of slipped sherds from Kozhinampara is of function of poor preservation or the small size sherd size; however, the possibility that it may be another example of inter-site variability cannot be ruled out.

It would seem, on the basis of the analysis provided here, that the composition of ceramics from PLG-127 is more akin to the Pallatteri complex than it is to the Kozhinampara assemblage. The differences are slight, but it does support the idea that Kozhinampara functioned differently than the megalithic sites. Given the lack of settlement data for the rest of the Tamil region, this observation will useful for future site identification in the region.

Geographic Variability: Comparison of Sites from the Northern and Southern River Tracks (Bharatapuzha versus Gayatripuzha)

Distribution, Location, and Size of Sites along Both River Tracks

A third way of analyzing the ceramic and settlement data from the Palghat Gap is to consider the possibility of sub-regional variability. Here, sites were divided according to whether they were associated with one or the other of the two major river tracks that traverse the Palghat Gap. The northern track, based on the Bharatapuzha River, includes the sites from the Pallatteri complex, Kozhinampara, PLG-015, and PLG-016. The southern track follows the Gayatripuzha River and includes the Pallassena complex, PLG-008, PLG-137, and PLG-140.

A comparison of site distribution in the northern and southern portions of the Gap shows that the northern river track has larger, more dispersed megalithic complexes, while the southern river track has smaller, more tightly clustered sites. More of the southern sites are clustered along the base of the Western Ghat where there are multiple tributaries from the mountains. Of course this difference may result from uneven site preservation and recovery, but if the differences are meaningful, an explanation can be

posited: the northern river track functioned primarily as the transport route between east and west, while the sites along the southern track functioned primarily based on their exchange relationships with the Ghat tribal communities.

Some differences between the two sub regions of the Gap can be demonstrated based on megalith distribution. Except for a single stone circle at Pallatteri and Kallekad, all the remaining stone circles (21 of 23, or 91%)) occur at sites along the southern river track (Pallassena, Elavancheri, Pazhambalikode, Palavur, Elambilaykalam, and Chitalancheri). Furthermore, all seven stone circles enclosing a slab cist also occur only at two sites, both of which are located in the southern portion of the Palghat Gap—Pallassena and Elavancheri. Of the 38 urn burials found in the Gap, 71 % (n=27) appear in northern sites, and 29 % (n=11) appear in southern sites. Slab cists and capstones are more evenly distributed between both sub regions, and the lone jar burial appears at Pallatteri, a northern site. The three sites with a single megalith atop an outcrop (Pallassena, Nalancheri, and Elavancheri) are located in the southern sub region. These striking variabilities in megalith configuration are a strong argument for functional and organizational differences between the communities inhabiting the northern and southern portions of the Palghat Gap.

Ceramic Variability between River Tracks

Geographic variation in ceramic assemblage was examined for the Palghat Gap, which would be particularly relevant if pottery manufacture and use were localized. There were a total of 223 rim sherds from the northern river track and 105 rim sherds

from the southern river track. Distinctions in ceramic patterning would support the data on subregional megalithic variability within the Gap.

Here distinctions in paste color are useful since paste color may be associated with clay sourcing, or even different traditions in firing, which could conceivably vary in different regions of the Gap, but chi-square calculations for the variations in paste color demonstrate a uniformity in both the northern and southern sites of the Gap (Table 7-11).[21]

Table 7-11

Frequency of Paste Colors: Northern and Southern River Tracks

#/%	Black	Red	Orange	Brown	Other
Northern Track	18 (8%)	1 (0.5%)	81 (36%)	110 (49%)	13 (6%)
Southern Track	6 (6%)	1 (1%)	36 (34%)	56 (53%)	6 (6%)

In Table 7-12, frequency of exterior slip colors is compared between the two subregions. The sample size is small because of the fewer rim sherds that had a discernible slip treatment, but a slight variation between the two groups can be identified. The chi-square analysis of the frequency distribution of this table is significant at the 0.05 level. The sites of the northern river track have a greater percentage of sherds carrying a red slip, while those the southern river track have more sherds with and orange slip. Here again the case for subregional variability is supported.

[21] The uniform distribution of the body colors between the northern and southern subregions of the Gap makes the differences in body color between the sherds from Pallatteri and Pallatteri more noteworthy.

Table 7-12

Frequency of Exterior Slip Colors: Northern and Southern River Tracks

# (%)	Black Slip	Red Slip	Orange Slip	Brown Slip	Other	TOTAL
Northern Track	8 (16%)	23 (45%)	15 (29%)	4 (8%)	1 (2%)	51 (100%)
Southern Track	8 (18%)	10 (23%)	19 (43%)	1 (2%)	6 (14%)	44 (100%)

Table 7-13 tabulates the frequency of rim classes for the northern and southern river tracks. Again, the distinctions here do not appear to be substantial, nor are they statistically significant.

Table 7-13

Frequency of Rim Class: Northern and Southern River Tracks

# (%)	Round Rim	Straight Rim	Ridged Rim	Simple Rim
Northern Track	69 (40%)	65 (38%)	18 (10%)	21 (12%)
Southern Track	30 (36%)	27 (33%)	16 (19%)	10 (12%)

In the Table 7-14, rim diameters for the northern track ranged from 70 to 360 mm; those for the southern track ranged from 60 to 340 mm. Again, one finds a lack of identifiable variability for the ceramics from the northern and southern river tracts of the Palghat Gap.

Table 7-14

Range of Rim Diameters per Rim Class: Northern and Southern River Tracks

# of Rims/ Diameter Range/%	Round Rim	Straight Rim	Ridged Rim	Simple Rim
Northern Track	16/70-230mm (42%)	12/140-360mm (32%)	3/160-260mm (8%)	7/110-360mm (18%)
Southern Track	13/80-320mm (45%)	8/140-240mm (28%)	5/160-310mm (17%)	3/140-340mm (10%)

Although there is a marked lack of ceramic variability between north and south track in ceramics, the differences in site size, location, and site clustering suggest a degree of dissimilarity in the activities or communities associated with each river track.

Summary of Results

Based on the data from Chapters 5, 6, and 7, the main patterns relating to the distribution of megaliths and ceramics within the Palghat Gap may be identified, and can be summarized as follows:

- In the Palghat Gap, the predominant megalithic type is the slab cist. The next most common type is the urn burial, followed by stone circles.
- "Miniature" megaliths occur only at Pallatteri, and were the most striking evidence for intra-site variability within this site.
- Intra-site clustering at Pallassena was exemplified by the grouping of urn burials along the southeastern base of the outcrop.
- "Outcrop" megaliths occur only at Pallassena, Nalancheri, and possibly Elavancheri, all found on the southern river track.

- Slab cists and capstones are evenly distributed throughout the Gap.
- Twenty-one of the 23 stone circles occur on the southern river track.
- Urn burials occur most often on the northern river track.
- In general, sites appear to be smaller and more tightly clustered on the southern track, while the sites of the northern track are more widely dispersed.
- Based on ceramic distributions, Kozhinampara may be identified as a settlement.
- Paste colors from Pallatteri are predominantly brown, while those from Pallassena are predominantly orange.
- Paste colors are similarly distributed on the northern and southern river tracks.
- Pallatteri has slightly higher proportions of round rim ceramics, while Pallassena has a slightly higher proportion of straight rim ceramics.
- Red slipped sherds predominate at Pallatteri, while orange slipped sherds predominate at Pallassena.
- Red slipped sherds predominate on the northern river track, while orange slipped sherds predominate on the southern river track.
- Rim classes appear to be similarly distributed on the northern and southern river tracks.

The Archaeological Evidence for Social Complexity in the Palghat Gap

Focusing on the archaeological data alone, certain conclusions can be made regarding the evidence from the Palghat Gap survey. Data from the megalith sites in the Gap indicate that they range in size from single structures to complexes with over 50 monuments. This kind of variation is certainly to some degree attributable to factors of site recovery and preservation—those sites with multiple burials are invariably located in localities that are sparsely populated, such as hillocks, or on protected land. On the other hand, it is also likely that variation in site size is a function of past variations in settlement size among the communities who constructed megaliths. The megaliths were constructed from locally available granite or laterite rocks, and comprised mainly slab cists, urn burials, stone burials, and capstones. Not much research has been done on the meanings and/or function associated with each megalith type, but it cannot denied that some element of choice or necessity was involved. The megalith distribution in the

Palghat Gap seems to favor a pattern based on horizontal distinctions in the social configuration, if mainly by the lack of clear markers that point to the existence of vertical social ranking. The degree of variability in the choice of mortuary feature and the distribution of megaliths within and between larger complexes do not point to a obvious vertical ranking system but do indicate a degree of differentiation that may be based on attributes that are unranked, such as kin group, religious affiliation, gender, age or occupation. The fact that a single megalith complex contained multiple megalith types in close proximity raises questions about the symbolism, meaning, and function associated with each type. Analysis of relative variation in megalith size was not really possible given the fact that many of the structures were incomplete or partially destroyed. However, the "miniature burials" from Pallatteri were noteworthy, both because of their size and sub-site clustering. The presence of vertical ranking or differentiation is certainly possible and may be represented by the three sites in the Gap that had a single outcrop megalith. The obvious interpretation is that this is a sign of ranking within the community that constructed the megaliths, but more research is required before such a conclusion can be drawn.

Beyond the megalith sites, it is noteworthy that relatively few sites could be clearly characterized as habitations or settlements—a phenomenon symptomatic of most of the Tamil region in general. Even if the only available measure is a dense sherd scatter, the only site that truly satisfied this criterion was Kozhinampara. PLG-127 has been tentatively identified as a settlement based on its ceramic assemblage, but it is clear that the issues of settlement identification and hierarchy require more region-wide data.

Perhaps the issue of site hierarchy or differentiation can be approached using data from the megalithic sites themselves. As noted earlier, of all the sites found, all of those with a large number of megaliths and/or a high density of ceramics—with the exception of Pallassena—are found in the northern portion of the Gap along the Bharatapuzha River track. In contrast, many of the remaining smaller sites appear to cluster in relative proximity along the southern Gayatripuzha River track. While such a distribution may result from factors such as site preservation and subsequent land use (in the form of population settlements and cultivation), it may also be an indication of differential site functioning within the Gap during the Iron Age period. The southern track, with its numerous tributaries connecting this region of the Gap to the Western Ghats, may have been composed of communities that engaged in continuous reciprocal exchange with the members of the Ghat forest tribes. The communities associated with the northern river track, on the other hand, may have more actively involved with the trade and transport through the Gap between the Coimbatore uplands in the east (where the presumed Chera capital, Karur, was located) and the *neital* (coastal) and maritime trade communities along the Malabar Coast in the west. The northern Bharatapuzha river tract forms a more direct connection with the sites of the Coimbatore region that dotted the Noyyal River tract. It would be reasonable to postulate further that the communities of the southern and northern river tracts participated in exchange practices with one another—and such a scenario would support the idea of heterarchical socio-economic relationship among the communities of the Gap, made up of a network of interdependent localized, non-centralized communities.

The ceramic analysis brought to light a number of observations. Chronological identification is made difficult by the fact that prevailing classification schemes are imprecise and difficult to replicate. The small size of many of the sherds from the Palghat Gap survey made it difficult to identify vessel size and function, so an independent and preliminary classification system was developed here based on rim morphology. Vessels were fired mostly orange or brown, which points to the local collection of clay based on the lateritic soil of the region. On the face of it, the ceramic assemblage was simple, utilitarian, and relatively uniform. Overall site-to-site variability in ceramic assemblages was not dramatic, but what differences were found are instructive. A few points of variability were noted earlier: the predominance of round rim sherds at Pallatteri, compared to Pallassena; the dominance of red-slipped ceramics at Pallatteri, contrasted with the dominance of orange-slipped ceramics at Pallassena; and the predominance of possible pedestal bases or lids at Kozhinampara. Interpreting the meaning and utility of this variability must necessarily involve some level of speculation, but given the fact that this level of microanalysis of Tamil ceramics has never so far been attempted, it is necessary to consider them. Nevertheless, the ceramic distinctions point to a pattern of local production and consumption, and to a measure of inter-community and sub-regional variability—at least with regard to the ceramic industry.

What do these strands of evidence from the Palghat Gap tell us about early Tamil social organization? First it might be useful to consider the topography of the region. The Gap is a high plain flanked by mountain ranges to the north and south. Four rivers traverse the Gap, all of which have a numerous tributaries feeding into them from the mountains, making the soil extremely fertile. Given the heavy agricultural use of the

region today, it is likely that some degree of cultivation took place in the past, and was perhaps the main adaptive strategy of the region. The megalithic sites are dispersed throughout the region, with no apparent preference for sub-regional sections, except that they tend to be located in alluvial tracts between the branches of the rivers and tributaries. Within these alluvial areas, the megalithic clusters themselves are usually found on non-arable segments of land that are spread among the swaths of land suitable for wetland agriculture. Given this distribution and the easy availability of water, it would make sense to suppose that the associated settlements were similarly dispersed on non-arable sections of the land. It is possible that agriculture was mixed with animal husbandry, as well a level of exchange with other *tinai* zones, such as the *kurinci* hill tribes for forest resources, and the *neital* dwellers for salt and fish.

Yet, despite the assertion here that Palghat social formations were local and non-centralized, the overall uniformity in ceramics seems, on the surface, to indicate a corresponding degree of cultural uniformity as well. One would expect a marked degree of site-to-site variability in material culture if the small communities were comparatively independent, but studies (e.g., Miller 1985) have shown that the relationship between material culture and cultural formations are rarely so deceptively simple. Nevertheless, some of the inter-site distinctions with the ceramics may indicate some variation in function or style. The Palghat Gap ceramics exhibited some site-to-site variation in paste color and in slip treatments. Both paste and slip color fall into four broad color ranges—black, red, orange, and brown. Variations in paste color are a function of raw materials and firing techniques, while varieties in slip treatment are perhaps more of a stylistic distinction. The predominance of round rim sherds at Pallatteri, for example,

though slight, may be the preliminary indications of stylistic differences among various megalithic sites—something that has not so far been considered in the literature. With regard to rim size, the observation that Kozhinampara has a higher proportion of small vessels in the straight and simple rim categories may provide some insights regarding non-megalithic sites. For round rim class, small vessel sizes dominated the two major megalithic complexes, Pallassena and Pallatteri (which produced a number of sherds overall comparable to Kozhinampara).[22] Other post-depositional explanations may be posited—for example, one or more of these sites contains more sherds from multiple chronological periods. Yet if this distinction is related to site type, then it could lead to insights regarding the composition, function, and style of ceramics of sites that are not clearly megalithic.

Another avenue for analysis has to do with the comparison of Palghat sherds with those from other sites in Tamilakam—not an easy endeavor, since the classification scheme developed for the Palghat ceramics is based on variables other than those traditionally employed in analyses of Tamilakam pottery. Three defining characteristics here would be paste and slip color, rim form, and rim size. Although the terminologies and descriptors are not well defined, it is interesting that so many of the sherds in the Palghat Gap survey have an orange paste and/or an orange slip. None of the published classification schemes for South India include any references to such a category of pottery, despite the fact that most of the traditional schemes are color-based. A major

[22] The assertion that Kozhinampara may have overall smaller vessels is supported by the relative rim height and thickness measurements as compared to Pallatteri and Pallassena. For all the sites, most of the rim heights and thicknesses fell within two ranges—the 6-10 mm range, and the 11-15 mm range. While the rims from Pallatteri and Pallassena were more or less evenly distributed between the two measurement ranges, of the rims from Kozhinampara, nearly 70% had rim thickness in the 6-10 mm range, and over 50% had rim heights in the same range.

obstacle to considering rim morphology has to do with the fact that most published studies do not include detailed descriptions of rim form.

Despite the limitations of the data, this analysis of site and ceramic variability in the Palghat Gap has revealed interesting patterns, which have not been recorded in the literature and which certainly merit further consideration. The benefits of the systematic analysis of early Tamil material culture is now undeniable; in the next chapter, the results of the data will be used to rethink the nature of social complexity in the Gap.

CHAPTER 8

MODELING SOCIAL COMPLEXITY IN TAMILAKAM: THE HETERARCHICAL APPROACH

Rethinking Complex Societies in Early South India

An important question about the material evidence from the Palghat Gap (and Tamilakam in general) is whether it provides clues about the degree and nature of complex organization in the Tamil past. Three attributes for sociopolitical complexity are thus considered for Tamilakam: 1) regional settlement hierarchy and regional integration; 2) evidence for ranking in burial treatment; and 3) intensified agricultural and craft production beyond the local/household level. The evidence from the Palghat Gap survey is considered in light of these and other attributes of complexity, and the proposal is set forth that, rather than assuming the clear integration of the Palghat Gap communities with a larger regional polity, the archaeological evidence better supports a model of localized social formations whose structure is more heterarchical than hierarchical.

Regional Settlement Hierarchy and Political Integration

As has been mentioned before, comparative data on settlement size is not available for Tamilakam. The only sites that have been excavated systematically are those that seemed to have served prominent roles in ancient Tamil political and economic

activities. Only recently are second-tier sites such as Kodumanal gaining more attention (Rajan 1998, 1994). Almost no data exists for the smallest settlements that must have dotted the landscape. It may be that the absence of settlement hierarchy is an argument for the non-centralized, localized nature of social organization in Tamilakam—one of White's criteria for a hierarchical society (White 1995). While urban centers that functioned as political capitals or coastal entrepots exhibited some level of architectural and material substance, it may have been that the vast remaining tracts of land were populated by small, lineage-based communities whose daily focus was on localized subsistence activities, and whose ties to the commercial and political centers were minimal. But it should be noted that one argument against localized communities is the fact that Tamil material culture fails to demonstrate clearly another of White's criteria—site-to-site variability in material culture. The well-known supposed uniformity of early Tamil (and South Indian) material culture has long been called upon as an argument for regional chiefly or kingly political formations. Yet Tamil sites and distribution lack common attributes of a political hierarchy and regional integration, such as monumental structures or evidence for extensive road systems linking centers with outlying communities. Moreover, archaeological evidence for the boundaries of Tamil polities remains to be investigated.

Burial Treatment

Although there is variation in the number and kind of artifacts, one does not find uniquely rich burials in Tamilakam. It is of course not possible to assume that treatment at death is a straightforward expression of position or status in life, but it is still

incumbent upon the archaeologist to search out variabilities before assessing their interpretive value. The mortuary sites and the habitations centers of Tamilakam do not seem to exhibit differences that could be interpreted as evidence of social stratification. While there may have been gradations in rank, it is difficult to make the case for distinct and identifiable strata. This is not to say that there no evidence of difference (the relatively abundant burials at Adichchanallur and the anthropomorphic megalith at Mottur are but two examples to the contrary), but not enough detailed analyses of burial features and artifact composition have been conducted to allow for scales of comparison. Published studies do not demonstrate a convincing segregation in any subsection of artifacts—bones, pottery, iron, or beads. Of course, status markers may have existed in Tamil society but remained hidden in burial practices, as was suggested by Byrd and Monahan in their study of Natufian mortuary behavior in southwest Asia (Byrd and Monahan 1995). Yet the lack of status indicators in the Natufian case is, like Tamilakam, coupled with a corresponding absence of other archaeological evidence to support traditional hierarchical social complexity, such as elite accumulation of controlled wealth or extensive public architecture (Byrd and Monahan 1995:31). The lack of clear markers for traditional ranking in Tamilakam may reflect flexible systems of social status and social differentiation—one of the criteria for a heterarchical system as defined by White (1995).

Intensified Agricultural and Craft Production

No sites in Iron Age/Early Historical South India have been excavated with the goal of recovering archaeobotanical data, so there is not yet a comprehensive understanding of past Tamil subsistence systems. Data on agricultural practices is largely dependent on the documentary sources and an evaluation of contemporary resources exploitation practices in the region. A little more may be suggested regarding craft production. Research in other parts of the world indicate that heterarchy in the tropics was characterized by non-centralized diverse ecosystems and mixed subsistence strategies (e.g., Potter and King 1999). One would find, then, evidence for a subsistence economy—where the resources were used by population to support themselves. Although it is assumed that elites in complex societies generally attempt to maintain some level of control over the production, distribution, and consumption of prestige or luxury goods, the archaeological evidence for utilitarian craft production is more variable (Stein 1998: 21). Studies of Vijayanagara society indicate that the elite segments did not interfere with utilitarian craft production (Sinopoli 1994), and this may be the scenario that best suits early Tamil craft activities.

On the other hand, evidence for political economy strategies—where the resources are appropriated in order to support and sustain the political institutions (chiefs, military, priests, etc.)—will be less obvious. The early Tamil population of course must have been engaged in daily subsistence strategies and exchange—the normal commodity give-and-take of households and communities. To get the staple financing for the political institutions, perhaps the Tamil rulers adopted practices similar to what Earle described for the Hawaiian chiefs: determining beforehand how much food and labor

were needed for a particular project—building or military, etc.—and then approaching all communities to extract appropriate tribute or tax (Earle 2001: 33). Appropriation of resources for military activities and such would thus be sporadic and situational, and hence not necessarily represented as intensified production throughout Tamilakam.

Beyond the Regional Constructions of the Texts: Heterarchy and Localized Social Formations in Tamilakam

Although the analysis of emergent social complexity has been a constant challenge for archaeologists (especially those working in South Asia) and although most studies have focused on the role and influence of elites, it must be remembered that elites comprised only a limited portion of early protohistoric societies (D'Altroy 1994: 353); the vast remaining population and the nature of their localized social formations must also be considered. As rich as the Sangam textual corpus is, the bulk of the information contained within them focus narrowly on the activities of the elite rulers and warriors—much like the texts originating in many early states and civilizations (Adams 2001: 347). The degree of power as exercised by the Tamil chiefs in early Tamilakam has not yet been examined using the archaeological data, and even historians searching for clues in the Sangam texts struggle with the question. An anthropological study of social complexity generally focuses on hierarchical political institutions, economic specialization, and class-based societal divisions (D'Altroy 1994: 353) and, to some extent, all three elements are described in the Sangam texts. But it is the thesis laid out here that the greater complexity and the emergence of chiefdom-like polities in Tamilakam, as detailed in the Sangam texts, did not necessarily include the equal

involvement of the elite or centers in all parts of the society or in all regions of the territory. Although South Indian archaeologists tend to assume a certain degree of centralized influence when considering the archaeological data, historians are more divided on the issue (although relatively few address the issue of local social formations). While the historical data suggest a high level of paramount control over extensive areas, the material data, with its lack of noticeable markers for regional control, points instead to the importance of localized social formations and identities.[23]

The texts, however, are relatively silent about the social conditions in which these various players lived, and it is here that perhaps the material record may offer some insights. Not surprisingly, the role of the chieftains and warriors, and their constant involvement in plunder and warfare, is emphasized in the Sangam heroic poetry, but such a focus overshadows the data on the daily lifestyles and activities of the majority of the populace. The principal means available to the archaeologist to make this inference is from an analysis of the material record, yet it is a daunting task. The situation is compounded by the fact that the material record of complex societies may have been manipulated in their turn and may in fact obscure actual relations of power (Morrison and Lycett 1994: 327). Moreover, identifying political and economic control usually involves the identification and analysis of material evidence related to elite involvement (Morrison and Lycett 1994: 344). For South India, the archaeological record to date seemed to indicate that Tamilakam was a single "culture zone" during the late Iron Age, Early Historic (and perhaps medieval) period; this superficial uniformity has led archaeologists

[23] This observation is in contrast with studies that use material culture to demonstrate the use of material symbols to link wide-ranging, long-distance communites into hierarchically organized political formations (e.g. Schortman, Urban, and Ausec 2001), and supports the contention being made here that traditional hierarchical constructions weaken when applied to South Indian material data.

to assume a corresponding cultural homogeneity. The evidence for elite activity is confined to those parts of Tamilakam that acted as political or commercial centers, such as the capitals and coastal entrepots. Within a region such as the Palghat Gap, with no significant centers, it is more likely to have been the operation of low-level social sectors, such as households, villages, and settlements that dominated social organization in the area. Any analysis of material culture from the region must therefore move away from traditional, regionally based descriptions and classification schemes and focus instead on the identification of the various local producers and consumers of material culture, and the multiple and varied relationships amongst them.

Fortunately, the information contained in the early Tamil texts do refer, albeit obliquely, to wider societal and ecological settings and processes. It is suggested here that the overall socio-economic scenario for early Tamilakam is best understood, not in the context of regional chiefdoms, but instead within the parameters of the *tinai* concept, the five-fold physiographic distinction described in Chapter 4—a series of distinct terrains with which different subsistence and economic activities are correlated. The *tinai* concept is indicative of one possible system of horizontal differentiation of the Tamil population, and further analyses of the texts seem to indicate that economic specialization and vertical divisions existed even at the sub-regional level. Within each micro-eco-zone, according to Gurukkal, people were living in clan-based descent groups dispersed in domestic segments around the main clan settlement (Gurukkal 1983: 24), and the various industries of the time—agriculture, metal-smelting, weaving, glass-making, pottery, etc.—were structured around kin-based production units. Participants of

each type of resource production apparently engaged in reciprocal exchange with one another (Gurukkal 1987: 48-49).

Such a characterization of early Tamil society, with its configuration based on local adaptive strategies to locally available resources, is strikingly similar to Potter and King's description of the "patchy or mosaic" resource structure of Maya lowland social organization (Potter and King 1995: 19), first mentioned in Chapter 2. Within the Palghat Gap, attention was most likely geared to the vast agricultural tracts available for wetland agriculture and to the forest resources that could be appropriated by hill communities (who represented yet another facet of the socioeconomic mosaic). Rather than being organized around first- or second-tier settlement hierarchies, the complex and diverse ecosystem represented by tropical Tamilakam would have been most efficiently exploited in a non-centralized and non-specialized fashion. Such a representation coincides well with the Sangam descriptions of the *tinai* physiographic division of the Tamil landscape, each with its own topography, natural resources, and systems of human adaptation. The broad plains of the Palghat Gap region may thus be tentatively identified as principally a *marutam* or wetland agriculture zone, and the surrounding Ghat mountains as the *kurinci* or forest zone. Within the *marutam tinai* were perhaps clan-based descent groups, who, as Champakalakshmi describes (1996:12) enjoyed a symbiotic reciprocal relationship with communities based in neighboring *tinai*, such as the *kurinci*.

It must be pointed out that the heterarchical bent of the *tinai* perspective does not in any way preclude the existence of hierarchical social formations in Tamilakam. It is very probable, as the texts suggest, that many hierarchically organized social elements

were in place (although the extent and exact nature of their impact is unclear). Amongst the chieftains, for example, the texts refer to at least two categories based on the extent of their domains: the larger *ventar*—the Chera, Chola, and Pandya polities—and the smaller *velir* chiefly lineages. Chieftains with different degrees of power would have controlled regions with numerous smaller settlements, which were in turned controlled by headmen. More powerful chieftains would have possessed the means to maintain some form of control over larger tracts of land. They would also have been able to support full-time craftsmen and manage the redistribution of more resources (Gurukkal 1983: 25), thus supporting artisan, craftspeople, and others working in non-subsistence areas. Such hegemony was likely maintained through predatory military campaigns and the forced extraction of tribute.[24]

The data from Palghat suggests that, while chiefdoms of Tamilakam may have been structured loosely as hierarchical polities, these polities were rooted within a system of pervasive sociopolitical heterarchy. Like Janusek's conclusions for Tiwanaku, the entire Tamilakam region was a highly diversified social, ecological, and political landscape, where direct power over ceramic and mortuary production was left in the hands of local groups (Janusek 2002: 55). Regional integration of the diverse populace was expressed mostly in the heroic bardic poetry of the Sangam texts, but the material culture attests to the variety of "sub cultural" communities the co-existed without constant reference to and impact of the regional polities (Janusek 2002: 56).

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[24] The Sangam texts describe the development of full-time hereditary warrior groups associated with the settlements, who were necessary for the constant plunder raids (Gurukkal 199xx:xx)

CHAPTER 9

CONCLUSION

This study has made use of a multi-tiered approach to evaluate social organization in Tamilakam. First, the region known as Tamilakam was defined and a close examination was made of the historical documents that have been extensively used in order to define the political, economic, religious, and social configurations of the region. It was understood that prevailing conceptions of early Tamil lifeways has been heavily influenced by the textual records and work of South Indian historians, and that the material record has played a subordinate role to the historical record.

Following an analysis of the documentary records, it was realized that in order to support or refute interpretations based on the texts, it was necessary to analyze and if necessary expand the material data associated with the time period, as a logical alternative source of information and insight. First, the archaeology of Tamilakam was considered, in terms of both the raw data and the interpretative trends that have hitherto been employed by South Indian archaeologists. Noticeable gaps were apparent in the use and analysis of archaeological data, most notably in the understanding of social formations outside of key political and commercial centers. Very little had been done archaeologically to analyze what was happening to the vast majority of the populace who did not participate in maritime trade and chiefly military engagements and plunder. Typically, the archaeological interpretations tended to rely heavily on the texts to provide the skeletal structure on which the material data analysis was supported. What was

needed was an analysis of early Tamilakam based on anthropological models of social complexity.

To address early Tamil social formations outside of urban centers, it was decided to conduct a survey in a region of Tamilakam that had hitherto not been systematically studied. The Palghat Gap region of Kerala was deemed an ideal location for three reasons. First, it functioned as the principal transit route between the eastern and western portions of Tamilakam, through which overseas and local trade goods would have traveled. Also, it is located in Kerala, where little survey work related to Tamilakam had been published, compared to the nearby state of Tamil Nadu. Third, the ecological setting of the Palghat Gap was appropriate for the investigation of the *aintinai* concept. It was expected that by collecting information systematically on site patterns and ceramics, it would be possible to analyze the archaeological data to speculate on the construction of non-urban and non-elite segments of Tamil society.

The main issue under consideration in this study was the extent to which the archaeological data supported the text-based argument that Tamilakam was organized around at least three main political lineages. Prevailing studies debated the extent to which Tamilakam was controlled by a series of kings or chiefs, and assumed a traditional hierarchical social structure. Chiefs or kings topped the hierarchy, followed by the warrior classes, with Hindu brahmana elements slowly emerging as a dominant force. The remainder of the population was engaged in mercantile activities, agriculture, trade, peasantry, and a portion of the population lived in tribal formations mostly in the mountains.

While elements of this hierarchical configuration were very likely in place in early Tamilakam, such an approach tended to focus mostly on the activities and organization of the political, military, mercantile, and religious elite; traditional archaeological research on Tamil urban centers reinforced this perspective. It failed, however, to consider in detail the daily enterprise of those members of the populace who lived in rural parts of the society and did not engage in regionally significant activities. In this study it was argued instead that an examination of these "invisible" echelons of society might lead to a revision or refinement of traditional hierarchical interpretations.

Despite the trajectory of earlier research, non-elites have not in fact been invisible in the historical texts. The prevailing organizational principle employed by the Sangam texts was based on the *tinai* concept of various physiographic zones associated with different forms of human adaptation. Such an idea was intriguing, first because of its adaptability to anthropological models of social organization, and second, because of the opportunity to employ the archaeological record to test it.

To this end, the results of the Palghat Gap survey have provided new insights about the nature and distribution of sites—megalithic clusters and settlements. They findings presented here have also demonstrated the benefits of detailed ceramic analysis as a means of evaluating various levels of social differentiation within the Gap. The megalithic and non-megalithic sites were evaluated based on their size, location, and their internal configuration. Because of the numerous difficulties associated with traditional Tamil ceramic schemes, the Palghat Gap ceramic assemblage presented an opportunity to develop an independent ceramic classification system that relied almost entirely on intrinsic characteristics and patterning.

The results of the site and ceramic analysis are intriguing, and tend to support two conclusions. First, the communities of the Palghat Gap, while not dramatically differentiated, do present some internal distinctions, but these distinctions do not support the idea of hierarchical differentiation in the region. Instead it is proposed that heterarchy is a more plausible description of early Tamil social complexity—a situation where social formations are localized, non-centralized, and not absolutely ranked. Second, the archaeological data supports the argument that the *tinai* concept may in fact have some material validity in Tamilakam. In the Palghat Gap, for instance, the data would indicate that the local communities engaged mostly in *marutam* wetland agriculture, with exchange or reciprocal relations with communities living in nearby *tinai* zones. Each community, or sets of communities, survived in the Palghat Gap by exploiting resources available in their particular environments, without excessive dependence on the regional polities. These resources could moreover be exchanged within and between *tinai* zones and very likely contributed to regional involvement in overseas maritime trade.

Directions for Further Research

Because this is the first time that an explicitly anthropological approach has been applied to the archaeological data from Kerala and Tamil Nadu, it is inevitable that the conclusions reached in this study will be preliminary. Five suggestions can therefore be proposed for further research on early Tamilakam.

1. Perhaps the first obvious step is to move beyond the examination of early Tamil sociopolitical complexity as a single case study, and instead begin to generate

models for comparative analyses with culturally related communities, as has been done, for instance, in the southwestern United States and northwest Mexico (Nelson 1995). A study of Tamilakam material culture contrasted with the polities in other regions of South India and with Sri Lanka—regions that share a similar material corpus and engaged in long-distance interactions with one another—would be extremely productive. For instance, it has been suggested here that pottery, such as the simple unadorned ware found in the Palghat Gap, was a locally produced and locally consumed resource. But if that is the case, why is there such a general uniformity in pottery ware, fabric, and design throughout Tamilakam and adjoining territories? Why does there exist a lack of distinction or difference between and within larger polities and communities? When the historical data describe separate regional histories in early South India, why is there so little formal or stylistic variability in most categories of material culture across the study region?

2. In addition to the investigation inter-regional comparisons, another opportunity would be to test the hypothesis that sub-regional variations existed within Tamilakam itself. Such a study could, for example, involve examining the distribution of megalith types within the different eco-zones associated with each *tinai*. Broadly conceived, it would be useful to compare the megalith distributions from the Palghat Gap with those from the coastal region, or with those from the highland forests. If these various physiographic segments were inhabited by communities with distinct adaptive practices, then such socio-economic variation may play out in their respective mortuary practices as well.

3. A third line of research has to do with the Sangam texts themselves. Rather than relying on interpretations of the texts by historians, it may be useful to examine them from the viewpoint of an archaeologist and to search out specific clues regarding Tamil material culture that might be tested archaeologically. Table 9-1 represents just a cursory examination of a few pages from one of the Sangam texts, the *Purananuru*, and demonstrates the wealth of information that could be mined simply by searching for descriptions of sites and artifacts that might have archaeological correlates.

Table 9-1

Selected Material Culture References in the *Purananuru*[25]

Section	Page Number	Material Culture
2	5	Gates of enemy walls
3	5	Bandits with arrows
4	5	Swords
4	5	War anklets
4	6	Chariots
6	7	Umbrella of victory
6	7	Pearl necklaces
9	9	Brahmins
3	4	Pandyas
6	6	River Kumari
9	9	Pahruli River
11	10	Ruler of Vanci
11	10	Porunai River
13	11	Farmers; fields; unthreshed paddy; toddy; fish; peacocks
14	11	Goad of iron
15	12	Reservoirs that were guarded
16	13	Sugarcane, jackfruit, pakanrai vines, bindweed, waterlilies
17	14	Cape Kumari

[25] Adapted from Hart and Heifetz 1999.

17	14	Cool Tonti w/coconut, fields, mountain boundary, broad seashore, backwaters
18	15	Wealthy Mutur (place name) where walls are finely made and lofty, deep moats
18	16	Dams so that water collects on low ground in field
19	16	Talaiyankanam where Tamils battled on broad mass of earth surrounded by ocean…
19	16	The seven chieftains
22	19	You..rule those on high Kolli hill; with tribute given you by kings…
23	20	Red silk-cotton trees
24	20	Fishermen with sturdy boats and toddy, plowmen
24	21	Long established Velirs
24	21	Vessels of gold
25	21	Royal drums bound with straps of leather
28	24	Fields of millet
29	24	Sandalpaste
29	25	Huts on four stilts with thatched roofs of arrowroot
32	26	Madurai with it many storied mansions
32	25	Fresh clay arranged on a potter's wheel
33	27	Good southern land of the Pandya king
33	27	Forest hunter with fierce dogs…heap of venison
32	27	Gates with seven walls
34	28	Honey, grains of millet, meat of cooked rabbits, rice, milk
35	28	Flow of the cool and lovely Kaveri that breaks into canals to feed the soil
36	29	King's city with guarded palace grounds
36	30	White sand by cool An Porunai river
37	30	Moats
39	31	City of Uruntai of the Cholas
39	32	Vanci and Chera king with lofty chariot and his symbol of the bow
45	36	Margosa tree; laburnum
52	39	Marutam trees in the fields of paddy
52	39	Handsome gambling halls; huge public squares

4. The fourth area for future investigations pertains to the kinds of sub-groups inhabiting Tamilakam and the linkages among them. The Sangam texts imply the strong presence of chiefdoms with a moderately complex, regional organization and it is not

unlikely that some parts may have been configured as such, particularly in the capitals and ports. It is also important, however, to factor in the other non-political elements mentioned in the texts, such as religious organizations, merchant guilds, and interior forest groups. If, as has been proposed in this study, the separate arenas of Tamil economy were based on the distribution of natural resources, it would be possible to conceive a series of sub regional scenarios for Tamiiakam: wetland agriculturalists, the craft producers (gem workers, bead makers, iron smelters), pearl divers, forest dwellers, coastal fishers and salt producers. These resources could include both staple items like rice and "luxury" trade items like pepper, spices, and wood. What, if any, was the role of religious groups and how may they be materially identified? Given the evidence for craft activities such as bead making, iron working, and mineral extraction, it is necessary to consider how these activities were organized. To what extent were the hill tribes integrated with the midland and lowland communities, and to what degree were they autonomous? Using the Sangam texts as a guide, it may be possible to propose the hypothesis that subsistence and surplus agriculture was local, craft production was conducted at the supra-village/community level, and that exchange with forest dwellers was probably reciprocal and unranked. The question then turns to identifying these various sub-regional social formations in the archaeological record.

5. Issues of political control and regional-wide organization still remain and is the final suggested line of research. To what extent did the Tamil chiefs influence the organization of social groups? Given the importance of maritime trade in early Tamilakam, little is known about how rulers benefited from the manufacture and flow of trade goods. It has been noted that the most valued trade items from Tamilakam were

raw goods like pepper and spices and woods, unlike the manufactured items of the Deccan and north—"luxury items" that may well have functioned like staple items locally. If extraction and transport of luxury and trade goods were organized at the regional level, what kind of material record would be left? The trade items came from the hills and hinterlands and were in all likelihood produced at the local level. The same question applies to the nature of the tribute that must have been garnered by the chieftains to finance their military activities. Earle has pointed out the management difficulties associated with wealth finance—it is difficult to control the manufacture and movement of wealth goods and is most easily done when movement is restricted and difficult, especially by transport by canoes or caravans (Earle 2001: 30).

Final Thoughts

As a first effort to assimilate the material data from Kerala and Tamil Nadu into the wider arena of anthropological knowledge, it is hoped that this study of the sites and ceramics from the Palghat Gap, Kerala, has demonstrated the benefits of doing comparative anthropological research in South India. It is now time to move beyond traditional culture-historical interpretations and apply models of sociopolitical complexity that have gained currency in other regions of the world. By employing a more rigorous and problem-oriented approach to the material culture, the archaeology of South India becomes a rich, valid, and autonomous source of information about the structure and operation of activities during Late Iron Age/Early Historic Tamilakam.

APPENDIX A:

CERAMIC PROFILES

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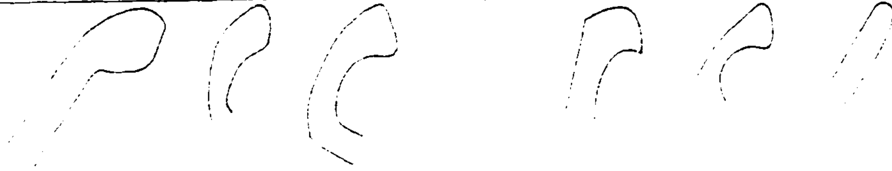
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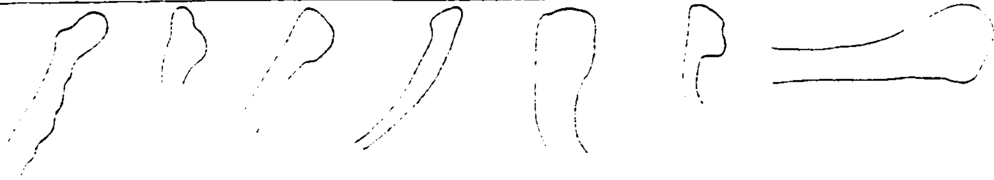
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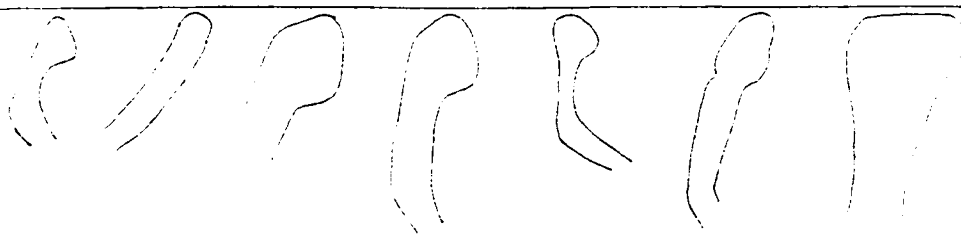
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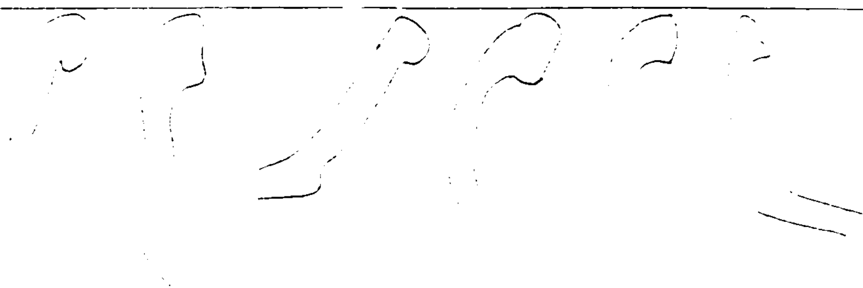


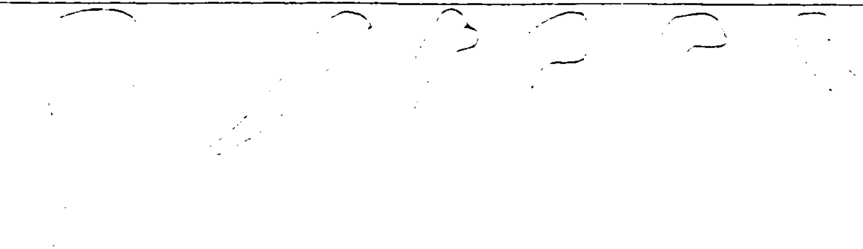
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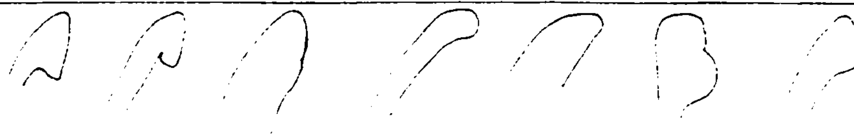
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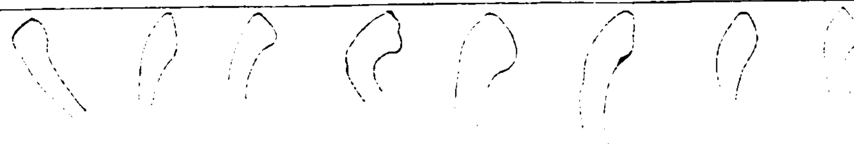
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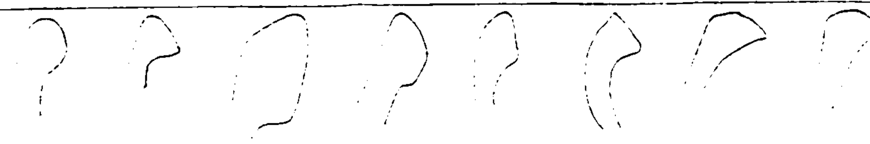
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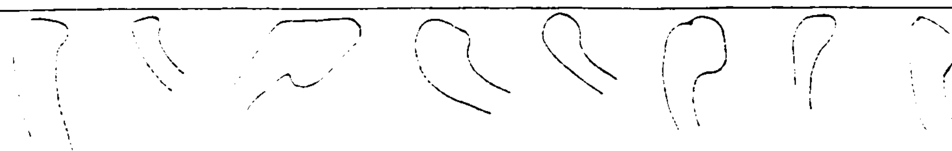
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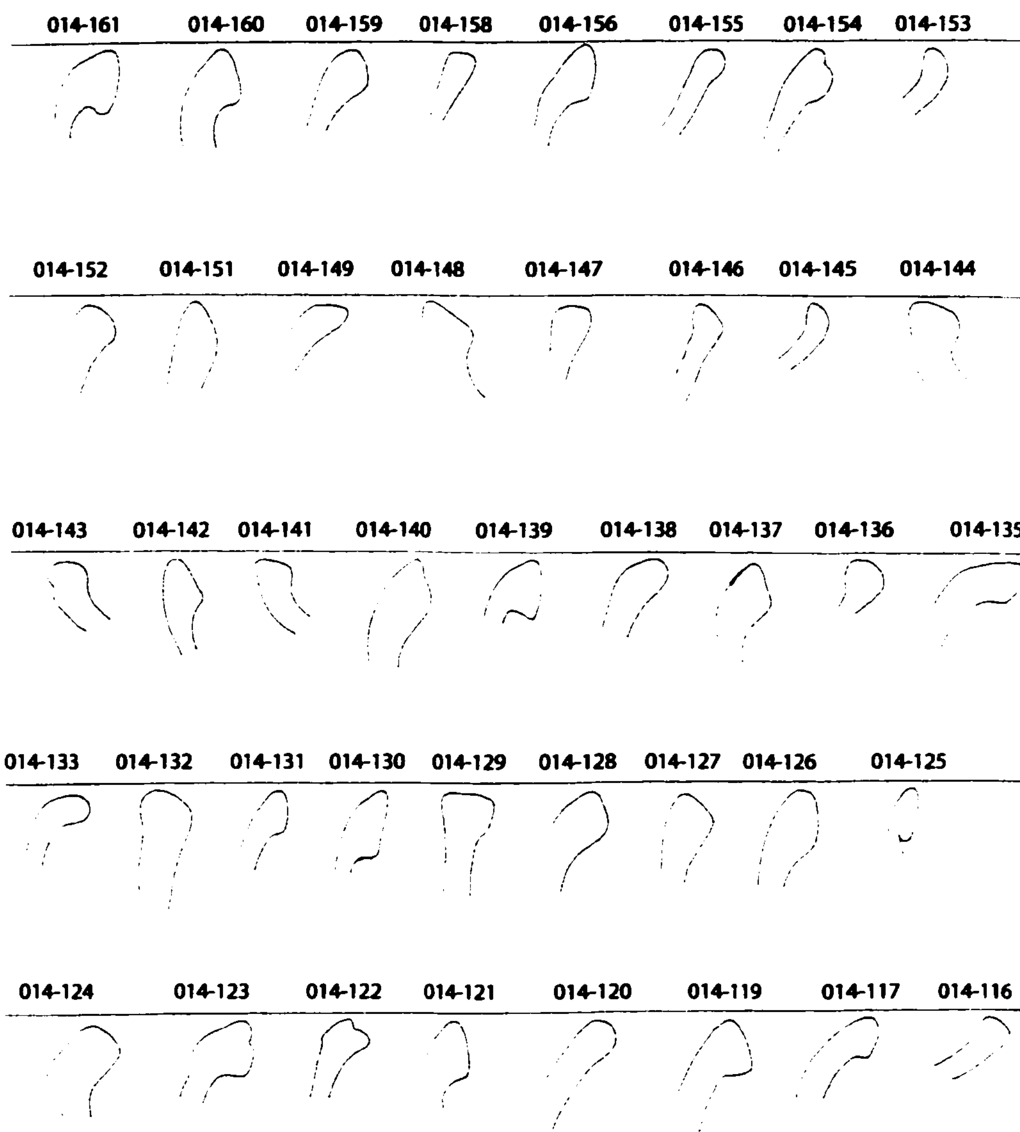
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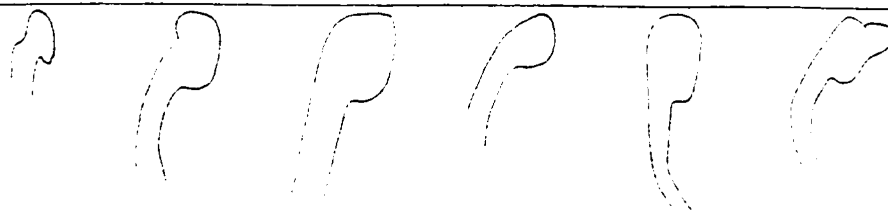
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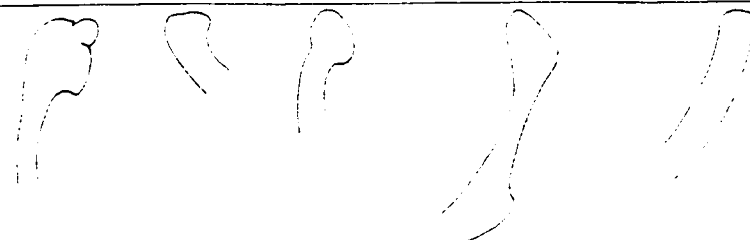
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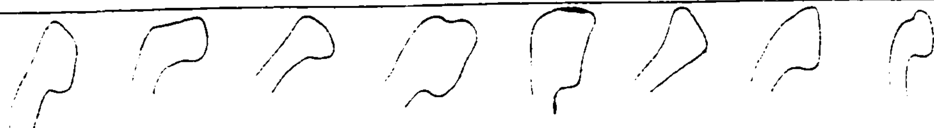


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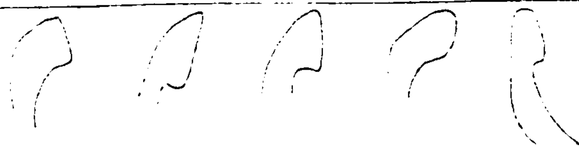


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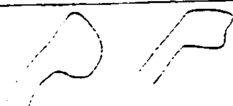
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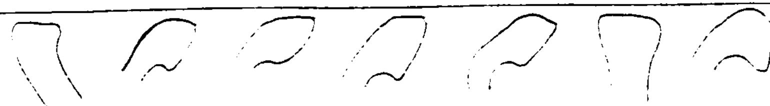
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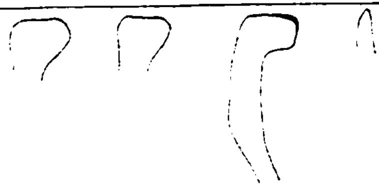


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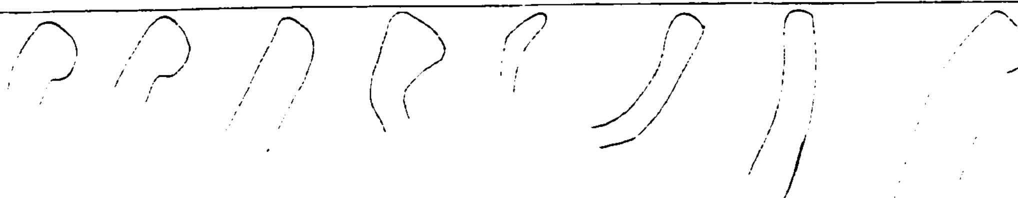




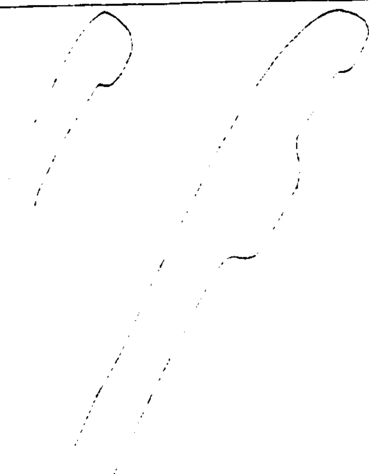
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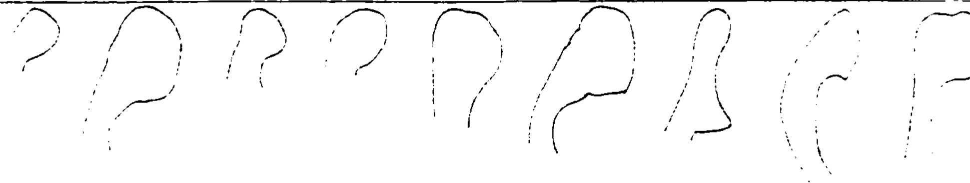
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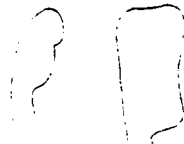
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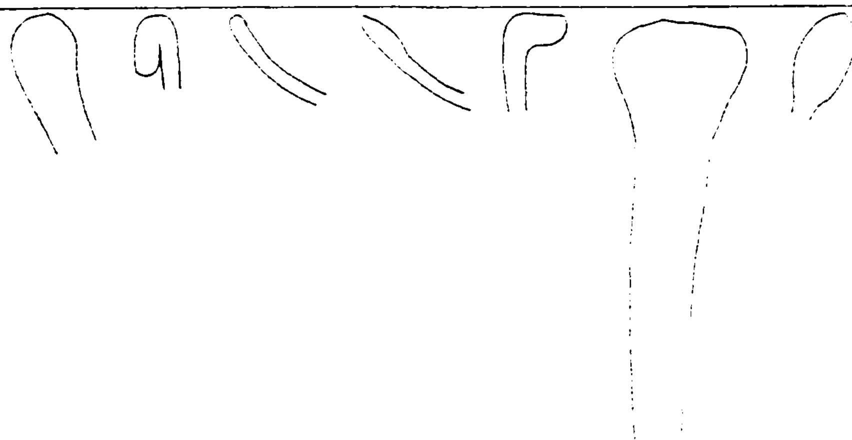
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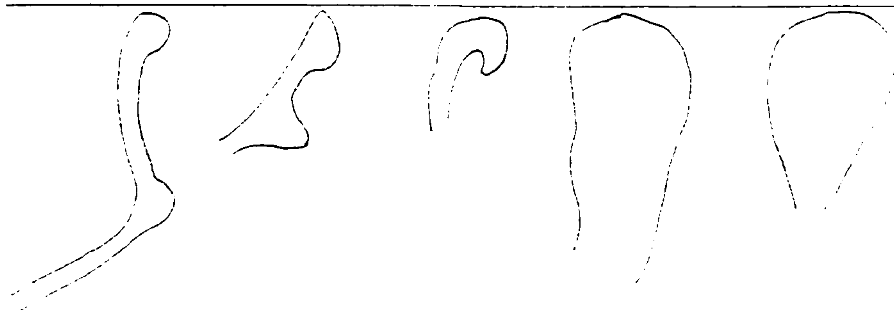


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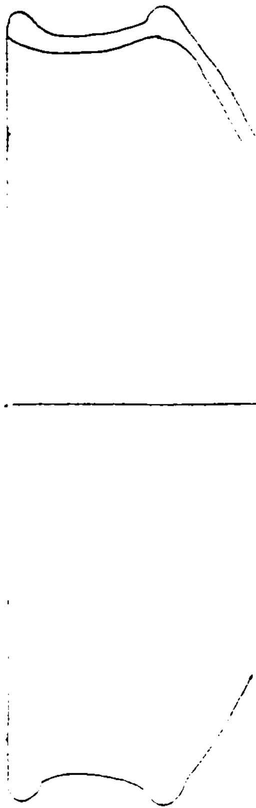

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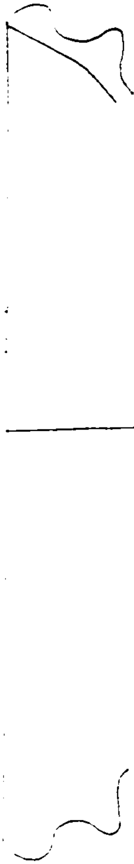

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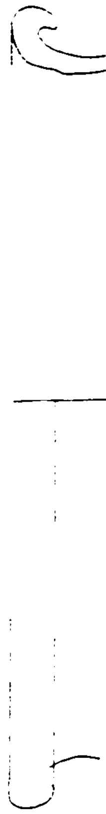
CERAMIC PROFILES



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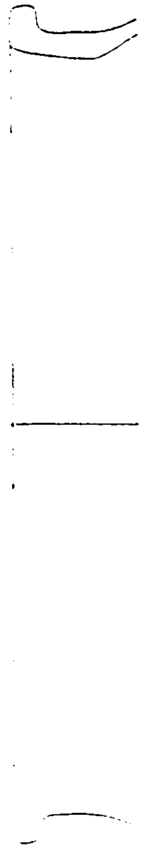


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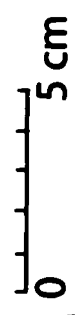
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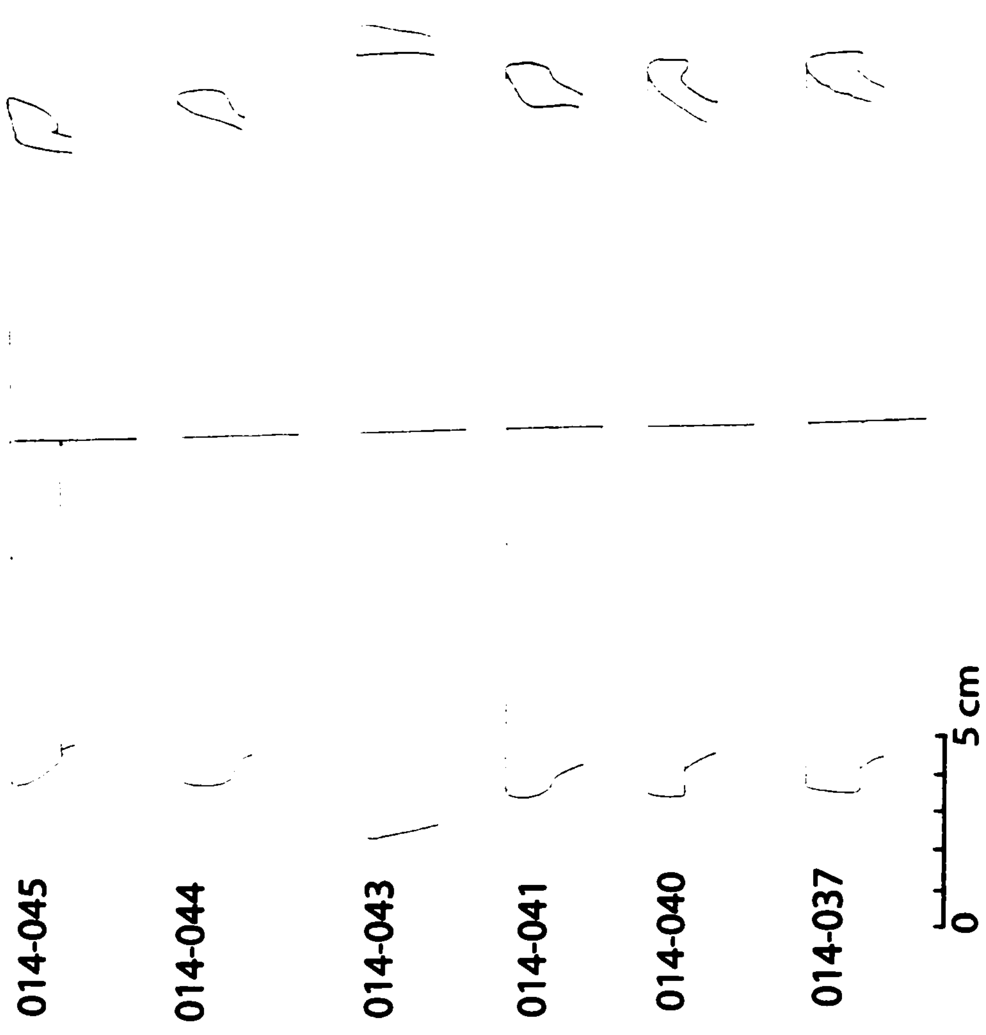
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014-029

014-028

0 5 cm


014-045
014-044
014-043
014-041
014-040
014-037
0
5 cm



014-055



014-053



014-049



014-048



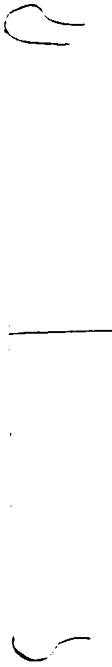
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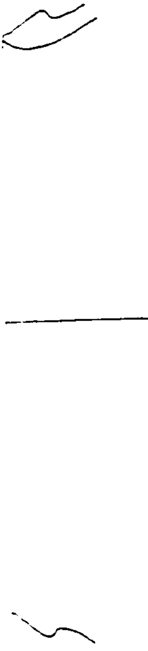
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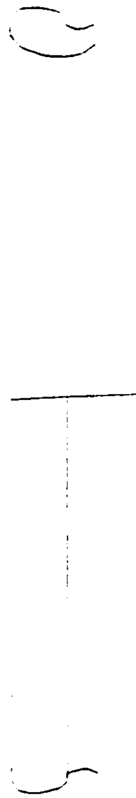



014-110


014-091


014-079

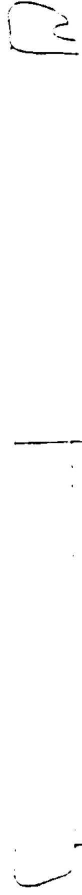

014-073


014-070


014-068
0
5 cm



137-185



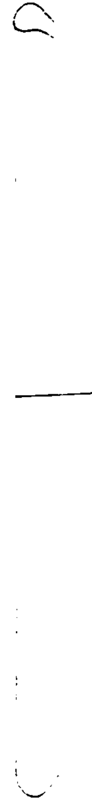
071-175



071-162



014-138

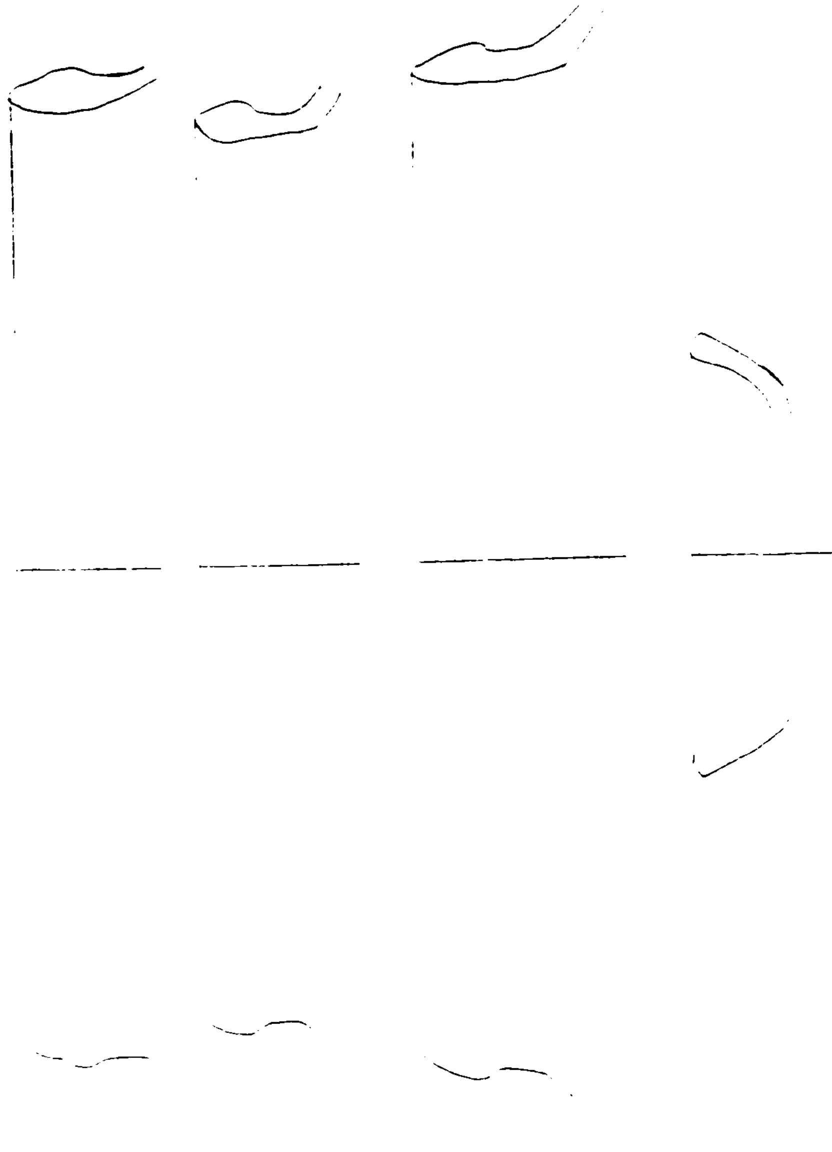


014-136



014-116





070-196
070-194
070-193
137-186
0
5 cm

067-226

016-218

070-202

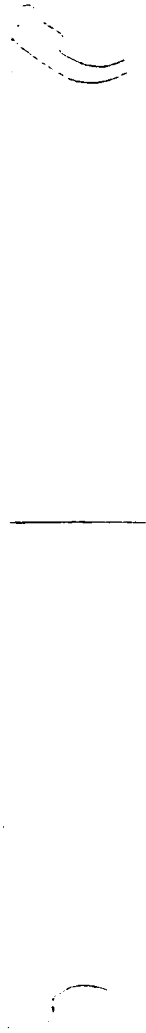
070-201

070-200

070-199

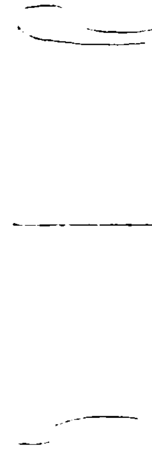
0 5 cm



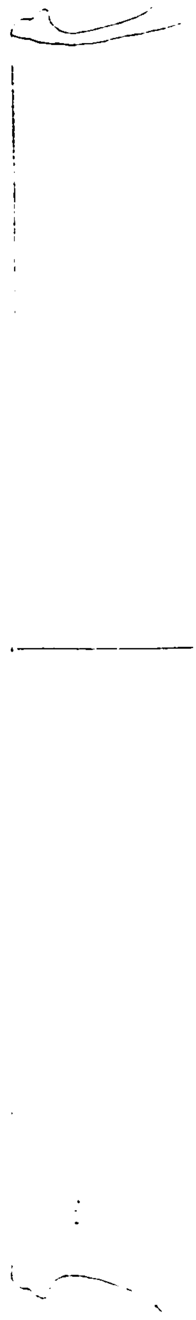








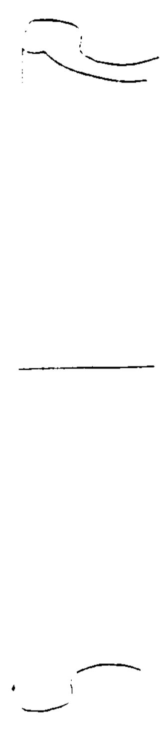
126-245
126-244
126-243
015-240
067-227
0
5 cm



127-259



127-256

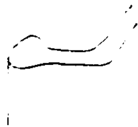


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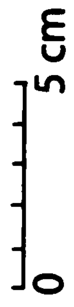


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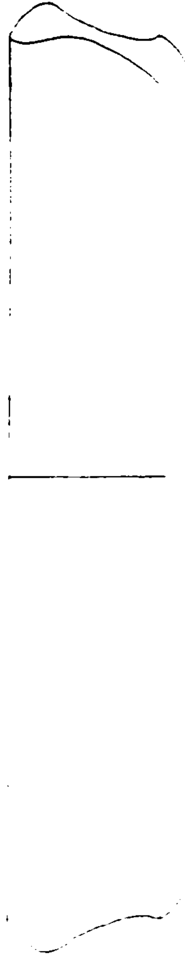
127-267

127-264

127-262

127-261

127-260



126-283



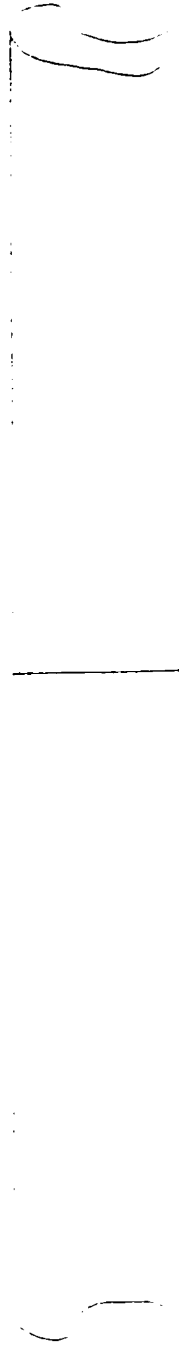
126-282



127-276

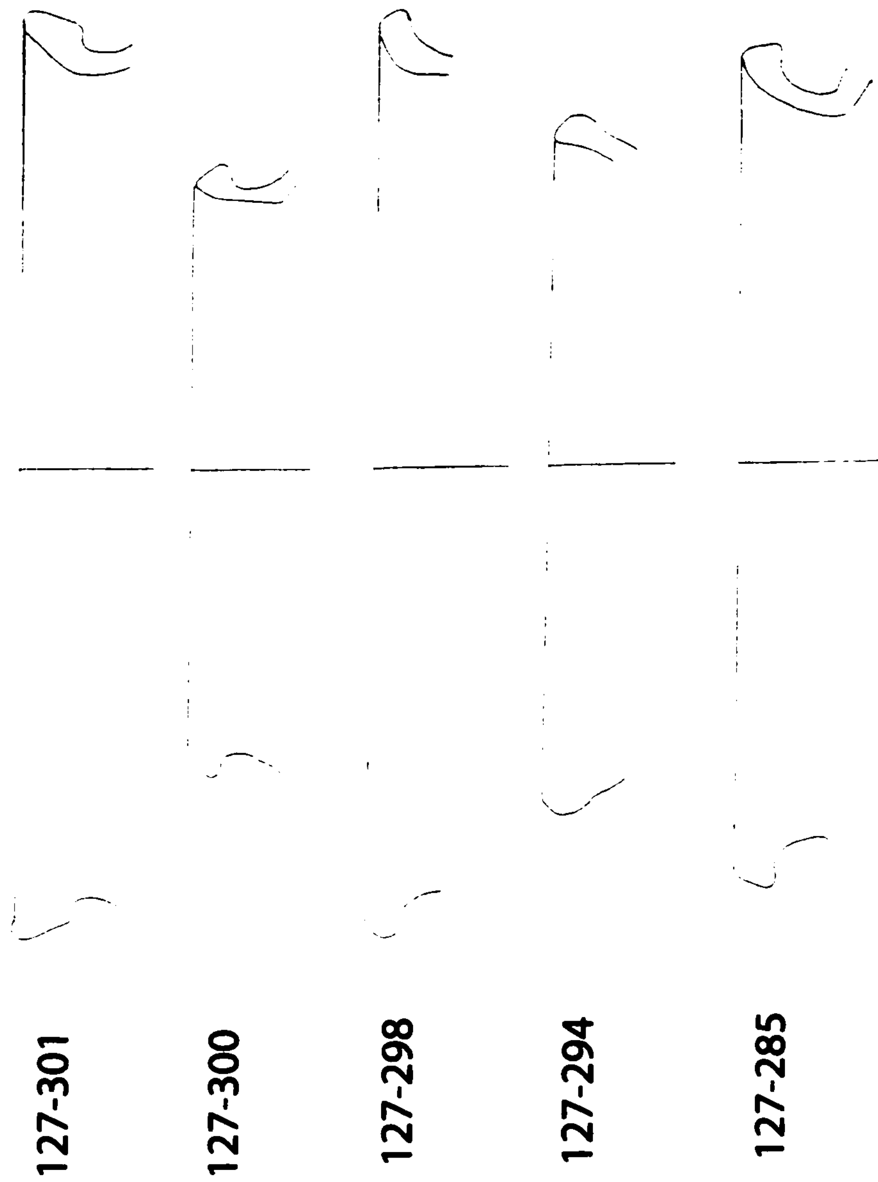


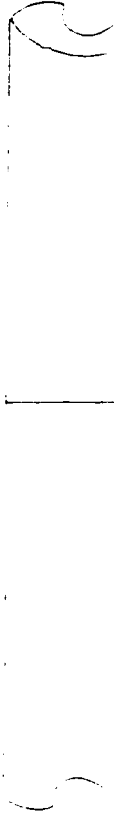
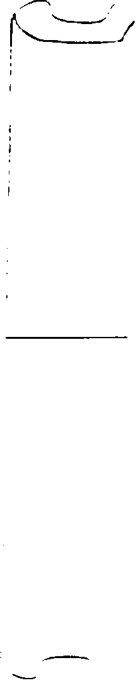
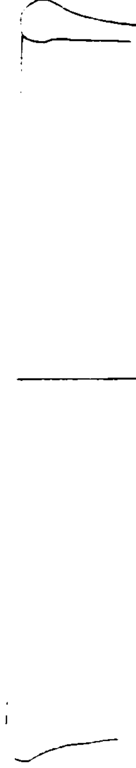
127-274

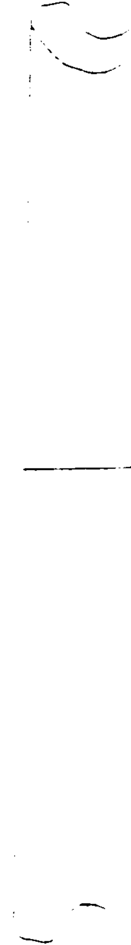


127-268

0 5 cm


127-301
127-300
127-298
127-294
127-285
0
5 cm


129-304

127-313

127-309

127-303

127-302
0
5 cm

070-202

070-204

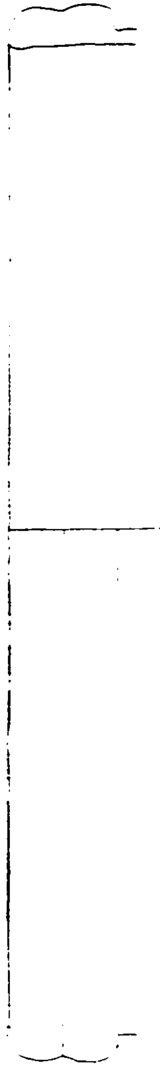
067-327

127-321

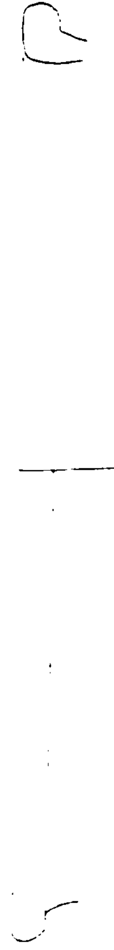
127-320

127-319

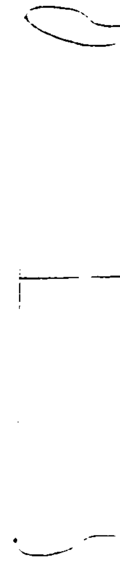
0 5 cm



070-199



070-201



070-200

0 5 cm

APPENDIX C:

CERAMIC RIM DATA

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
68	330	1	1	1	10	1	X	X	7	8	8	4			?					
68	329	8	14	14	10	1	X	X	4	9	10	5			X			x		
68	328	2	10	10	20	1	X	X	4	11	15	8			X		x			
68	327	2	10	10	10	2	X	X	4	9	13	4		160	X		x			
68	326	8	1	1	10	3	SLIP	SLIP	3	9	10	6			X					
127	325	1	1	1	5	1	X	X	6	8	8	4			?		x			
127	324	12	1	6	5	1	X	X	9	9	4	5			?					
127	323	10	10	10	10	1	SLIP?	SLIP?	18	19	8	9			?					
127	322	24	10	10	20	2	x	x	5	11	13	8			X				x	
127	321	8	7	7	20	2	SLIP	SLIP	13	15	11	10		240	X		x			
127	320	1	1	1	5	1	X	X	2	9	8	3		140	X			x		
127	319	2	2	10	15	1	X	X	4	8	11	4		80	X		x			
127	318	25	10	10	20	1	SLIP?	X	6	12	16				X		x			
127	317	10	1	1	5	1	X	X	3	8	8	5	21			X				
127	316	3	3	3	20	1	X	X	7	11	12	5			X				x	
127	315	1	1	1	20	2	X	X	3	10	11	6			X			x		
127	314	10	1	1	15	2	X	X	3	10	13	6		190	X			x		
127	313	1	1	1	10	1	X	X	3	10	8	5	21	160	X		x			
127	312	26	1	1	5	1	X	X	4	8	9	4			X		x			

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
127	311	25	2	10	10	1	X	X	7	13	10	8			X					x
127	310	26	1	1	5	1	X	X	5	12	15	6			X		x			
127	309	27	1	1	5	1	X	X	12	11	7	6		170	?					
127	308	22	10	10	5	1	X	X	2	9	9	5			X			x		
127	307	1	1	1	5	1	X	X	4	10	12	5			X			x		
127	306	2	10	10	5	1	X	X	5	10	14	7				X				
127	305	26	1	1	5	1	SLIP	SLIP	3	14	14	6			X				x	
127	304	10	1	7	5	1	X	X	3	11	11	5			X			x		
127	303	2	5	3	10	1	SLIP	SLIP	13	14	9	6		170	?		x			
127	302	1	1	1	10	1	X	X	4	13	11	8	22	220	X		x			
127	301	2	6	6	10	1	SLIP?	SLIP?	5	10	14	6		220	X			x		
127	300	2	5	7	10	1	SLIP	X	4	7	10	3	24	140	X			x		
127	299	25	1	7	5	1	X	X	6	10	12	5			X		x			
127	298	1	1	1	10	1	X	X	5	10	12	5		220	X			x		
127	297	23	7	7	20	1	SLIP	SLIP	3	12	14	6			X		x			
127	296	1	1	1	5	1	X	X	2	7	12	4			X			x		
127	295	20	4	4	20	1	SLIP/ WAS H	SLIP/WA SH	13	13	11	7			?					

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
127	294	2	1	1	5	1	SLIP	SLIP	4	7	8			160		X				
127	293	3	6	6	15	1	X	X	4	8	12				X				x	
127	292	19	2	10	10	1	X	SLIP?	2	14	11	7			X			x		
127	291	2	1	7	5	1	SLIP?	X	2	10	7	4			X			x		
127	290	24	2	2	20	1	X	X	4	16	13	5			X			x		
127	289	23	2	2	15	1	SLIP?	X	10	9	10	6				X				
127	288	27	1	13	20	1	X	X	10	13	28	8			?				x	
127	287	25	2	2	10	1	X	X	7	14	14	8				?		x		
127	286	1	1	1	10	2	X	X	3	8	9	5			?			x		
127	285	1	1	1	15	1	X	X	3	11	11	5	23	200	X			x		
126	284	2	3	5	5	1	BURNISHED SLIP	SLIP	4	9	11	5			X		x			
126	283	2	3	5	10	1	SLIP	SLIP	4	10	15	5	32	220		X				
126	282	25	1	11	15	1	X	SLIP	4	6	6	6		110		X				
127	281	1	1	1	15	2	x	x	5	12	9	6			?			x		
127	280	2	1	1	5	1	SLIP	SLIP	4	7	9	4			X		x			
127	279	2	11	11	10	1	SLIP	SLIP	5	5	4	5				X				

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
127	278	1	5	5	5	1	SLIP	SLIP	7	9	11	5			?				x	
127	277	2	3	5	5	1	SLIP	SLIP	3	7	12				?				x	
127	276	2	3	2	5	1	SLIP	X	4	8	4	9	4	150	X			x		
127	275	2	1	1	5	1	SLIP	SLIP	2	5	5	3				X				
127	274	25	11	11	5	1	SLIP	SLIP	10	12	11	9	28	140	X					x
127	273	2	3	5	5	2	SLIP	SLIP	2	8	3	9			X				x	
127	272	15	3	2	10	3	SLIP/ PAIN T?	X	8	15						X				
127	271	2	18	11	10	1	SLIP?	SLIP?	3	8	9	4	22		X			x		
127	270	2	2	7	10	1	X	X	5	6	5	6				X				
127	269	2	2	2	10	1	X	X	7	16	17	8			X		x			
127	268	2	7	7	15	2	X	X	5	15	16	7		320	X		x			
127	267	2	1	1	5	1	SLIP	SLIP	2	8	9	2	23	150	X		x			
127	266	6	13	13	5	1	SLIP	SLIP	6	9	13	6	34		X				x	
127	265	2	5	5	15	1	SLIP	SLIP	24	24	13	12			X					x
127	264	2	1	1	15	1	SLIP?	SLIP?	7	18	11	5		230	X		x			
127	263	2	11	11	5	1	SLIP	SLIP	7	12	19	6	50		X			x		
127	262	2	5	5	5	1	SLIP	SLIP	3	9	8	4		220		X				

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
127	261	2	1	10	5	1	SLIP?	SLIP	9	14	12	6		240	X		x			
127	260	2	1	1	10	1	SLIP	SLIP	6	12	10	7		240	X			x		
127	259	6	10	10	15	2	SLIP	SLIP	2	10	12	4	33	310	X				x	
127	258	2	1	1	15	1	SLIP	SLIP	25	25	11	11		340	X					x
127	257	2	10	1	5	1	SLIP?	SLIP	10	10	6	8				X				
127	256	2	3	1	10	1	SLIP	SLIP	4	11	9	5		220	X				x	
127	255	1	1	1	20	2	X	X	4	14	11	8			X			x		
129	254	1	1	1	5	1	X	X	9	12	9	7			X			x		
129	253	1	1	1	5	1	X	X	8	9	10	7				?				x
129	252	2	1	1	5	1	X	X	5	11	9				X		x			
129	251	2	1	1	5	1	SLIP/ WAS H?	SLIP/WA SH?	3	8	8	6			?			x		
126	250	2	5	5	5	1	SLIP	SLIP	4	10	16				?			x		
126	249	2	3	5	5	1	SLIP	SLIP	3	7	8	5			?		x			
126	248	14	18	5	5	1	SLIP	SLIP	8	10	15	5		160	X		x			
126	247	6	16	3	10	1	SLIP?	SLIP?	10	13	16	6		220	X		x			
126	246	2	3	3	10	1	SLIP/ PAIN T?	SLIP/PAI NT?	5	7	11	4			X		x			

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
126	245	2	3	5	10	1	SLIP/ PAIN T?	SLIP	8	8	15	3	30	190	X		x			
126	244	2	5	5	10	1	SLIP/ PAIN T?	SLIP?	9	11	15	5		240	X				x	
126	243	1	3	5	5	1	SLIP	SLIP	10	12	17	4		230	X				x	
15	242	25	11	11			SLIP	SLIP	8	8	6					?				
15	241	2	11	6	10	1	SLIP	X	5	7	10				?			x		
15	240	3	5	19	15	2	SLIP?	SLIP	6	8	10	5		180	X		x			
15	239	2	6	3	10	1	SLIP	SLIP	7	9	12				X			x		
15	238	2	19	3	15	1	SLIP	SLIP	5	10	12	5			X			x		
15	237	24	3	5	5	1	SLIP	SLIP	12	12					X					x
15	236	22	14	2	10	2	SLIP	SLIP	4	12	9	6			X		x			
67	235	7	1	1	10	1	SLIP	SLIP	5	9	11	7			X			x		
67	234	8	8	8	10	2	X	X	4	10	13	7			X			x		
67	233	26	1	1	20	2	X	X	5	19	15				X			x		
67	232	2	2	2	20	2	X	X	8	14	16				X				x	
67	231	2	2	2	25	2	X	X	6	12	19				X		x			
67	230	10	1	1	20	1	X	X	5	14	15	6		360	X			x		

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
67	229	2	2	2	20	2	X	X	9	13	16	7			X		x			
67	228	3	3	3	15	2	X	X	8	13	20	6			X				x	
67	227	2	10	10	5	1	X	X	5	8	12	3		100	X		x			
67	226	25	2	2	10	1	SLIP?	X	16	16	17	7	35	210	X			x		
16	225	2	5	5	5	1	SLIP	SLIP	4	9	13				X		x			
16	224	25	5	5	10	1	X	X	9	11	10	6			X		x			
16	223	1	1	1	10	2	X	X	3	9	5	7			X		x			
16	222	2	2	2	10	1	X	X	10	13	15	7			X		x			
16	221	2	1	1	10	2	X	X	10	12	21	6			X			x		
16	220	15	1	3	15	1	SLIP?	SLIP?	4	9	4					X				
16	219	2	15	2	20	2	SLIP	X	4	12	12	6			X			x		
16	218	1	1	1	15	2	X	X	4	9	9	5		70	X		x			
16	217	2	17	7	15	3	SLIP?	X	3	12	12	6			X			x		
16	216	1	1	1	5	1	X	X	4	10	15				X			x		
16	215	1	1	1	5	1	X	X	4	10	6	10			X			x		
16	214	16	12	6			SLIP	X	4	8	12	5			X		x			
16	213	2	5	6	5	1	SLIP	SLIP	4	6	9	4	17		X		x			
8	212	21	5	5	5	1	SLIP	SLIP	3	11	10	5			X		x			
8	211	25	7	7	5	1	X	X	4	8	9	4			X				x	

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
70	210	2	5	5	5	1	SLIP	SLIP	5	13	6				X		x			
70	209	2	5	5	5	1	SLIP	SLIP	3	9	8	6	10		X		x			
70	208	10	1	10	5	1	X	X	2	5	4	5			X		x			
70	207	2	5	5	5	1	SLIP	SLIP	3	12	7	2			X		x			
70	206	2	5	5	5	1	SLIP	SLIP	5	10	13	4			X		x			
70	205	2	5	5	5	1	SLIP	SLIP	5	10	8	3			X			x		
70	204	21	3	5	5	1	SLIP	SLIP	5	10	8	5			X		x			
70	203	2	5	5	10	1	SLIP	SLIP	9	13	26	10			X				x	
70	202	2	3	5	5	1	SLIP	SLIP	7	11	8	4		200	X		x			
70	201	2	5	5	5	1	SLIP	SLIP	16	15	8	6		220	X		x			
70	200	2	7	7	10	2	X	X	5	8	18	5		140	X		x			
70	199	2	3	5	10	1	SLIP	SLIP	9	12	30	6		260	X				x	
70	198	1	5	5	25	2	SLIP	SLIP	32	30	21	15		360	X					x
70	197	2	5	5	10	1	SLIP	SLIP	10	15	28				X				x	
70	196	2	5	5	5	1	SLIP	SLIP	6	8	18	7	34	230	X		x			
70	195	2	5	5	5	1	SLIP	SLIP												
70	194	2	5	5	5	1	SLIP	SLIP	4	10	15	5	29	220	X			x		
70	193	2	18	5	5	1	SLIP	SLIP	5	10	17	6	32	240	X			x		

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
137	192	9	9	9	15	2	X	X	4	10	10	8			X		x			
137	191	2	2	2	10	1	X	X	4	10	11	8			X		x			
139	190	27	10	10	5	1	X	X							X					
137	189	7	7	9	10	1	X	X	3	9	7	9			X					x
137	188	2	2	10	15	1	X	X	3	13	13	6			X			x		
137	187	6	1	6	5	1	SLIP?	X	2	3	5	4			X		x			
137	186	3	14	3	5	2	SLIP	SLIP	6	7	6	5		100		X				
137	185	11	5	5	10	2	X	X	8	10	9	8		60		X				
137	184	1	1	1	10	2	X	X	4	11	9	9			X					x
137	183	2	7	2	20	2	X	X	5	13	10	8			X		x			
137	182	1	1	1	10	1	X	X	15	17	13	12	22		X				x	
71	181	2	1	1	5	1	X	X	8	9	10	6			X		x			
71	180	24	1	1	15	1	X	X	4	7	10				X		x			
71	179	7	1	1	5	1	X	X	3	11	11	7			X			x		
71	178	26	9	9	5	1	X	X	2	6	9	3			X		x			
71	177	2	2	2	5	1	X	X	5	10	15	4			X				x	
71	176	26	7	1	10	1	X	X	13	12	13				X			x		
71	175	24	10	10	10	1	X	X	11	11	15	4		200	X		x			
71	174	24	10	10	10	1	X	X	7	12	14	7			X		x			
71	173	2	11	11	5	1	SLIP	SLIP	4	12	12	3			X		x			

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
71	172	2	5	5	5	1	BUR NISH ED SLIP	BURNIS HED SLIP	6	9	10	4			X		x			
71	171	27	1	1	10	1	X	X	6	13	16	7			X		x			
71	170	26	1	1	10	1	X	X	4	10	10	7			X		x			
71	169	2	3	6	5	1	SLIP	SLIP?	8	10	11	6			?		x			
71	168	2	10	10	5	1	BUR NISH ED?	X	11	16	16	8			X		x			
71	167	1	1	1	5	1	X	X	8	13	15	6			X		x			
71	166	25	1	1	10	1	SLIP?	X	5	12	25	6			X					
71	165	2	11	1	10	1	SLIP?	X	4	9	12	6	25		X		x			
71	164	8	1	1	5	1	X	X	12	12	13	4			X			x		
71	163	7	7	5	5	1	SLIP?	BURNIS HED SLIP	6	11	15	6			X				x	
71	162	2	1	1	5	1	SLIP	SLIP	12	13	25	7		240	X			x		
14	161	28	6	16	20	1	X	X	5	11	11	7			X		x			
14	160	1	1	1	5	1	X	X	3	10	10	6			X			x		
14	159	24	10	2	15	1	X	X	3	9	8	6			X		x			
14	158	24	7	7	5	1	X	X	6	6	6	4			X					x

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	157	25	3	6	5	1	X	X												
14	156	6	9	9	10	1	X	X	2	8	10	5			X			x		
14	155	7	9	9	10	1	X	X	4	6	6	4			X					x
14	154	2	1	1	5	2	X	X	3	9	10	5			X				x	
14	153	2	1	1	5	1	X	X	4	5	6	3			X		x			
14	152	2	7	7	10	2	SLIP?	SLIP?	4	10	8	8			X					x
14	151	3	6	6	5	2	SLIP?	SLIP?	3	9	12	8			X					x
14	150	1	1	1	5	1	X	X							?					
14	149	26	1	1	5	1	X	X	3	5	7	4			X					x
14	148	25	2	2	10	1	X	X	4	10	11	6			X			x		
14	147	26	1	1	10	2	X	X	6	8	8	4			X		x			
14	146	2	7	1			X	SLIP?	3	6	7	3			X		x			
14	145	1	1	1	5	1	X	X	2	5	5	2				X				
14	144	2	1	1	5	1	X	X	3	9	13				X		x			
14	143	3	7	7	15	3	X	X	4	6	9				X					x
14	142	1	1	1	5	1	X	X	2	9	11	4			X			x		
14	141	2	2	2	15	1	X	X	7	6	7	6			X					x
14	140	3	1	1	10	1	X	X	3	10	10				X			x		
14	139	2	1	1	20	2	X	X	5	10	10	5			X			x		
14	138	16	9	9	5	1			10	8	8		8	110	X					x
14	137	2	7	7			X	X	4	10	10	6			X			x		

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	136	2	1	1	10	1	X	X	6	9	11	3		190	X		x			
14	135	25	2	7	10	1	X	X	18	13	12	6			X					
14	134	2	10	10	5	1	X	X												
14	133	1	1	1	5	1	X	X	7	10	6	4			X		x			
14	132	26	9	9	5	1	X	X	10	9	6	6			X					x
14	131	11	11	11	5	1	X	X	3	6	4	7			X			x		
14	130	1	1	1	5	1	X	X	2	8	6	13			X			x		
14	129	25	7	7	5	1	X	X	11	8	7	6			X					
14	128	1	1	1	5	1	X	X	6	9	12	5			X		x			
14	127	27	9	9	10	1	X	X	9	10	5	11			X			x		
14	126	25	11	11	10	1	SLIP	SLIP	6	10	15	6			X		x			
14	125	27	9	9	5	1	X	X	2	5	10	3			X			x		
14	124	25	7	7	10	1	X	X	5	9	14	5			X		x			
14	123	27	1	1	15	1	X	X	3	9	16	6			X				x	
14	122	23	9	9			SLIP?	X	6	10	7	6			X				x	
14	121	7	7	7	5	1	X	X	4	8	12	5			X			x		
14	120	3	9	6	10	1	X	X	4	8	6	6			X					x
14	119	27	10	10	25	2	X	X	3	10	10	6			X			x		
14	118	1	1	1	5	1	X	X												
14	117	27	1	1	10	1	X	X	3	8	11	6			X		x			
14	116	26	9	9	5	2	X	X	4	6	5	4		150		X				

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	115	25	11	11	10	2	SLIP	SLIP												
14	114	26	9	9	5	2	X	SLIP?	3	8	13	5			X			x		
14	113	1	1	1	5	1	X	X	1	6	12	4			X			x		
14	112	26	9	9	20	2	X	X	8	15	20	13			X				x	
14	111	11	1	1	5	1			9	10	7	5			X		x			
14	110	2	3	2	10	1	SLIP	X	12	12	7			160	X					x
14	109	2	10	10	5	1	X	X												
14	108	25	10	7	20	2	X	X	7	12	18	5			X				x	
14	107	1	1	1	10	1	X	X	3	10	11	5			X			x		
14	106	1	1	1	10	1	X	X	3	8	12	6			X			x		
14	105	25	1	1	15	1	SLIP?	X	5	10	10	6	11		X			x		
14	104	2	11	11	5	2	SLIP	SLIP	12	12	6	7								x
14	103	26	10	7			X	X	6	9	15	6			X		x			
14	102	2	10	1	5	1	SLIP?	SLIP?	3	9	9	6			X			x		
14	101	2	2	2	15	1	X	X	8	12	19	7			X		x			
14	100	26	10	10	25	2	X	X	5	15	15	7			X			x		
14	99	10	11	9	10	1	WAS H?	WASH?	2	6	7	3				X				
14	98	16	7	6	10	1	X	X	2	6	10	3			X			x		
14	97	2	7	7	5	1	WAS H?	WASH?	2	6	5	4			X			x		
14	96	24	10	10	20	1	X	X	3	8	8	6			X				x	

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	95	24	7	6	20	1	X	X	4	10	11	6			X			x		
14	94	1	1	1	15	1	X	X	3	9	9	6			X			x		
14	93	6	9	9	10	1	SLIP?	SLIP?	3	5	8	3			X			x		
14	92	10	1	13	15	1	X	X	4	8	10	4			X			x		
14	91	25	10	10	15	1	SLIP?	SLIP?	6	9	10	6		150	X		x			
14	90	10	7	2	5	1	X	X	3	10	9	6			X			x		
14	89	2	7	9	5	1	X	X	8	15	20	9			X		x			
14	88	29	11	11	15	1	SLIP?	SLIP?	3	10	12	7			X		x			
14	87	1	10	10	5		X	X	4	8	10	5			X			x		
14	86	1	1	1	10	1	X	X	4	10	10	5			X			x		
14	85	10	7	7	5	1	X	X	9	12	8	6			X			x		
14	84	26	10	10	5	1	X	X	10	11	5	6				X				
14	83	10	1	1	10	6	X	X	10	13	11	9			X					x
14	82	10	10	10	20	1			6	6	5	5				X				
14	81	30	2	2	20	2	X	X	16	9	17	8	15		X			x		
14	80	30	2	2	15	1	X	X	7		7	6		160						
14	79	2	9	7	10	1	X	X	6	11	9	7		90		X				
14	78	15	9	9	5	1	X	X	5	8	7	4			X		x			
14	77	26	5	1	5	1	SLIP	X	10	10	12	6			X		x			
14	76	6	9	6	5	1	SLIP?	X	8	9	7	4			X		x			

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	75	7	1	31	5	1	X	WASH?	4	10	12	5			X			x		
14	74	24	31	1	15	2	WAS H?	X	4	10	12	9			X		x			
14	73	24	31	1	10	1	SLIP/ WAS H?	X	4	9	12	6		140	X			x		
14	72	27	12	9	5	1	X	X	10	10	7	5			X			x		
14	71	1	1	1	10	1	X	X	8	9	9	5			X			x		
14	70	3	9	9		1	X	X	7	11	15	5		180	X		x			
14	69	13	3	1		2	X	X												
14	68	12	1	6		1	X	X	3	7	10	5		130	X					x
14	67	7	1	1		1	X	X	9	11	8	6			X					x
14	66	1	11	1		1	X	SLIP?	3	10	10	5			X			x		
14	65	6	1	1		2	X	X	4	9	11	9			X					x
14	64	15	3	7		1	SLIP?	SLIP?	4	8	8	7			X				x	
14	63	10	1	20		1	X	X	1	4				220						
14	62	1	1	1		1	SLIP?	SLIP?	12	11	12				X					x
14	61	6	9	9		1	X	X	10	15	15	8			X		x			
14	60	2	15	3		1	X	X												

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	59	3	2	2		1	X	X	5	10	21	6			X				x	
14	58	8	10	10		1	X	X	2	10	12	5			X			x		
14	57	8	3	5		1	PAIN T?	X	12	12	8	4			X					
14	56	10	1	1		1	X	X												
14	55	6	9	6		1	WAS H?	X	18	18	8		12	170	X					
14	53	11	11	11		1	SLIP	SLIP	9	9	6	4		190	X		x			
14	52	1	1	1		3	X	X	7	8	9	5			X		x			
14	51	2	10	10		1	X	X	2	7	8	4			X			x		
14	50	1	1	1		2	X	X	##	15	17	11			X		x			
14	49	6	1	1		2	X	X	7	12	18	7		160	X				x	
14	48	6	9	9		3	X	X	3	10	11	6		170	X			x		
14	47	1	1	1		1	X	X	4	8	10			180	X					x
14	46	18	14	14		2	X	X	4	11	10			180	X			x		
14	45	10	10	10		1	X	X	4	19	19	8		180	X			x		
14	44	1	1	1		3	X	X	4	9	19	4		180	X			x		
14	43	3				1			9	9	5			200		X				

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
14	42	3	12	12		1	WAS H?	WASH?	4	11	19	7			X				x	
14	41	6	7	7		2	X	X	4	12	21	6		190	X		x			
14	40	1	1	1		2	X	X	5	12	11	8		190	X			x		
14	39	1	11	1		1	WAS H?	X	14	12	6	5		190						
14	38	2	2	2		3	X	X	11	10	15			300 +	X		x			
14	37	3	10	10		2			3	18	11	6		190	?			x		
14	36	3	10	10			X	X	6	19	23	9			X				x	
14	35	10	10	10		2	X	X	5	10	9			190	X					x
14	34	3	10	10		2	X	X	4	19	21	8		230	X		x			
140	33	2	1	1		1	SLIP?	SLIP?	3	4	4				X					x
140	32	10	10	10		2	SLIP?	SLIP?	6	9	13			160	X				x	
140	31	1	11	10			SLIP?	SLIP?	5	9	13			150	X		x			
140	30	7	1	1		2	SLIP/ WAS H?	SLIP/WA SH?	4	1					X			x		
140	29	10	5	10		1	SLIP	X		11				170						

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
140	28	10	10	10		1	SLIP	SLIP		10				160	X					x
140	26	3	3	3		1	X	SLIP/WASH?		11					X					
140	25	3	7	7		1	SLIP/WASH	SLIP/WASH							X					x
19	23	1	1	1		2	X	X												
19	22	5	5	7		2	X	X	10	11		10			X					x
19	21	2	11	5		1	SLIP/WASH?	SLIP/WASH?												
19	19	3	3	3		1	SLIP?	SLIP?												
19	17	3	12	1		1	X	X	6	7					X					
19	16	11	13	11		1	X	SLIP/WASH?	2	3	2	2		100		X				
19	15	3	18	5		1	SLIP	SLIP												
19	13	11	9	3		1	SLIP	X	2	5	1	4		180		X				
19	12	2	3	3		1	SLIP	SLIP	13	13	6	5			X					
19	11	3	10	10		1	BURNISHED SLIP	X												

SITE ID	CERAMIC ID	BODY COLOR	EXT SURF COLOR	INT SURF COLOR	INCLUSIONS (%)	MAX INC SIZE (MM)	EXT SURF TREAT	INT SURF TREAT	LIP THICK (MM)	RIM THICK (MM)	RIM HEIGHT (MM)	NECK THICK (MM)	NECK HEIGHT (MM)	RIM DIAMETER (MM)	RESTRICTED	UNRESTRICTED	Round Rim	Straight Rim	Ridged Rim	Simple Rim
19	10	10	5	3	'	3	SLIP	SLIP?						240	X					x
19	9	10	18	5		1									X		x			
19	7	10	3	1		1	SLIP?	SLIP	8	8		5		170		X				
19	6	10	3	5		1	SLIP	SLIP						190	X				x	
19	5	10	5	5		1	SLIP	SLIP		10				170	X		x			
19	2	2	5	5		3	SLIP	SLIP		25					X					x
19	1	6	10	20		4	X	X							X					x

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